# ECONOMIC IMPACTS OF THE SKEENA RIVER FRESHWATER SPORT FISHERY

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**B.C. Ministry of Tourism**

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The responsibility for the content of this report is the consultant's alone, and the conclusions reached herein do not necessarily reflect the opinions of those who assisted during the course of this investigation or the province of B.C. which funded the study.

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# Executive Summary

The Skeena watershed represents one of the last major Pacific drainages where record size chinook and wild summer run steelhead can be found. The watershed is unique in the diversity of species available, the large size of fish, the fly-fishing opportunities, and its pristine wilderness settings. No other area in North America combines these fishery attributes in the manner of the Skeena system.

Skeena steelhead populations are in a state of decline, a decline which has occurred in spite of progressively more stringent angling regulations. Current angler participation and catch rates are only one-half of what they were five years ago. Many individuals and interest groups are now concerned that steelhead stocks are, in fact, threatened.

The Skeena River situation has been identified by the provincial government as one of the most important issues facing the angling community today. In spite of its high profile, there has been no information on the economic significance of the sport fishery in the area. This analysis was intended as a first step in filling this gap and enhancing understanding of this important fishery and its impact on the local area and the province.

The intent was to document the economic impacts of the Skeena freshwater sports fishery as one part of the broader multi-faceted resource and management picture. By necessity, the study has a narrow focus and addresses economic impacts for the year 1990 and for angling in the Skeena watershed area only (and not other watersheds such as the Nass and Kitimat Rivers). Impacts are estimated for the Province as a whole and a specifically defined local area, and for the freshwater component of the sports fishery. The study does not consider the potential of the sport fishery, nor does it consider the downward trends in use and impacts experienced in the past 5 years.

Information sources included: mail surveys of guides and anglers conducted for this study, British Columbia Ministry of Environment (MOE) guide reports and Steelhead Harvest Analysis data, and other secondary data.

### *Angling Activity 1990*

In 1990 an estimated 190,000 angler-days of angling activity occurred in the Skeena watershed area (Exhibit 1). The 190,000 days can be segmented in several ways -- by angler residence, by target species and by guided use.

| Angler Residence | | Target Species | | Type | |
|---|---|---|---|---|---|
| Local Area | 66% | Steelhead | 19% | Guided | 6% |
| Rest of B.C. | 13% | Salmon | 42% | Non-guided | 94% |
| Rest of Canada | 8% | Freshwater | 39% | | |
| Outside Canada | 13% | | | | |

The angler effort estimates did not include angling in saltwater that is targeted at Skeena fish stocks -- an estimated 4000 boat-days (or 10,000 angler-days) in the Prince Rupert area.

*Guide Operations*

The guiding of anglers for steelhead, chinook, coho and other species is an important and high profile activity in the area. The vast majority of clients are non-Canadian and come to the region solely to fish.

In 1990 the 54 active guide operators:

- guided 15,400 angler-days;
- earned $3.4 million in revenues;
- provided 187 seasonal jobs for themselves, assistant guides, and other workers.

The 15,400 guided days included 12,000 days within the watershed proper and 3,400 in non-watershed areas such as the Kitimat River. Half of the 12,000 guided days were targeted at steelhead, and 46% of watershed guided days occurred on the Skeena River mainstem. Guide days were evenly split between Lower Skeena and Upper Skeena guides.

*Economic Impacts*

Total local expenditures by anglers on fishing trips to the Skeena watershed were an estimated $12.6 million. Total in-province expenditures were an estimated $15.8 (including the $12.6 million in local expenditures).

Many people take trips to the Skeena Region to fish and to conduct other activities such as general touring, visiting friends and relatives, business, etc. The result is that not all of the expenditures identified above can be attributed to angling in the Skeena watershed. Information from the angler survey as to primary trip purpose was used to prorate or allocate trip expenditures to isolate expenditures attributable to sport fishing.

Impacts on the local economy from the $10.4 million in local expenditures attributable to Skeena sport fishing in 1990 were (Exhibit 2):

- 190 person-years of local employment;
- $4.7 million in local wages and salaries; and
- $7.0 million in local value-added or income.

The impacts include both direct effects as well as ripple effects on supplier and consumer industries.

Estimated impacts on the provincial economy from the $13.5 million in provincial expenditures attributable to Skeena sport fishing were:

- 300 person-years of provincial employment;
- $8.7 million in provincial wages and salaries; and
- $12.7 million of provincial value-added or income.

The share of impacts attributable to steelhead angling, as opposed to angling for salmon or freshwater species, was 27% of the total impacts. The number of steelhead angler-days has declined by close to a half since 1986, a year of very strong steelhead returns. Guides indicated that guiding activity was down in 1990 from 1989 and 1988 activity levels. It appears, therefore, that the 1990 angler expenditures and associated economic impacts were lower than those in the late 1980's.

*Resource Concerns*

The common underpinning to the variety of angling experiences is a strong and healthy resource. There is great potential for the sport fishery from an economic development perspective. The Skeena watershed is very productive, and its unique aspects draw anglers from around the world.

However, this potential can not be realized under the present fisheries management regime, and the dual, sometimes conflicting management responsibility vested in the federal and provincial governments. The commercial fishery at the mouth of the Skeena is the major harvester of Skeena steelhead even though commercial steelhead bycatch is relatively small as a share of the number of target sockeye caught. There is also concern about the impacts of Indian food fishing practices, and other (logging and mining) resource users on fish stocks and habitat.

Angling is still relatively high quality but declining. This decline in success rates ultimately will result in loss of angling activity and angler expenditures to the region, if in fact this has not already occurred.

The resource and management problems in the area are pressing and escalating rapidly. The evidence is compelling that a better system of management is required. There is a need to tap the potential of the Skeena sport fishery, without at the same time, significantly reducing the substantial benefits of the commercial fishery. This is not a simple task; otherwise a solution would have been found by now. It is hoped, however, that this economic study will raise the profile of the resource issue, and help foster a new spirit of cooperation and resolve among users, resource managers and the public in searching for solutions.

**Exhibit 1: Estimated Angler-Days in the Skeena Watershed 1990**

| Target Species /Type | Angler Residence | | | | |
|---|---|---|---|---|---|
| | Local | Rest of B.C. | Rest of Canada | Outside Canada | Total |
| *Steelhead Days* | | | | | |
| Guided | 100 | 300 | 600 | 5,000 | 6,000 |
| Non-guided | 20,800 | 6,600 | 1,200 | 2,300 | 30,900 |
| All | 20,900 | 6,900 | 1,800 | 7,300 | 36,900 |
| *Other Species Days* | | | | | |
| Guided | 100 | 300 | 600 | 5,000 | 6,000 |
| Non-guided | 104,000 | 17,800 | 12,600 | 12,700 | 147,100 |
| All | 104,100 | 18,100 | 13,200 | 17,700 | 153,100 |
| *All Days* | | | | | |
| Guided | 200 | 600 | 1,200 | 10,000 | 12,000 |
| Non-guided | 124,800 | 24,400 | 13,800 | 15,000 | 178,000 |
| All | 125,000 | 25,000 | 15,000 | 25,000 | 190,000 |

**Exhibit 2: Economic Impacts of Sport Fishing in the Skeena River Watershed 1990**

| | Local Impacts | Provincial Impacts |
|---|---|---|
| *Steelhead Angling* | | |
| Direct Expenditures ($ million) | $2.8 | $3.7 |
| Income ($ million)[a] | $1.9 | $3.5 |
| Wages & Salaries ($ million)[b] | $1.3 | $2.4 |
| Employment (PY's)[c] | 50 | 85 |
| *Other Angling* | | |
| Direct Expenditures ($ million) | $7.6 | $9.8 |
| Income ($ million)[a] | $5.1 | $9.2 |
| Wages & Salaries ($ million)[b] | $3.4 | $6.3 |
| Employment (PY's)[c] | 140 | 215 |
| *All Angling* | | |
| Direct Expenditures ($ million) | $10.4 | $13.5 |
| Income ($ million)[a] | $7.0 | $12.7 |
| Wages & Salaries ($ million)[b] | $4.7 | $8.7 |
| Employment (PY's)[c] | 190 | 300 |

a Income or value-added is the sum of wages and salaries and business income (business income or capital surplus comprises interest payments, depreciation, taxes and after-tax profit).

b Included in income.

c Person years.

Note: Impacts include direct, indirect supplier and induced consumer spending impacts.

# 1.0 Introduction

The Skeena watershed represents one of the last major Pacific drainages where record size chinook and wild summer run steelhead can be found. The watershed is unique in the diversity of species available, the large size of fish, the fly-fishing opportunities, and its pristine wilderness settings. No other area in North America combines these fishery attributes in the manner of the Skeena system.

The uniqueness and quality of the Skeena fishery have become known throughout North America and the world through numerous publications, including the book Steelhead Paradise[1] and the 1990 "Splendid Skeena" article in Trout magazine.[2] The area provides an international sports fishery, and numerous tourism businesses have been established that cater to the visiting angler. These include individual guides, fishing camps and lodges, transportation services, and sport fishing retail stores.

The Skeena watershed is a nursery area producing millions of adult fish. These fish form the basis of not only a recreational fishery in freshwater, but also an Indian food fishery, a saltwater recreational fishery, and a commercial fishery in Canadian and U.S. waters.

The variety of fish stocks distributed over a wide and remote area makes management very difficult. Many target angling species such as steelhead, chinook and coho spend much of their adult life cycle in the ocean, but must migrate through the gauntlet of international and domestic commercial fisheries in tidal waters before being available to the Skeena River angler. Fish within the river system proper contribute to an Indian food fishery. Other resource users within the watershed such as forest companies, mining companies and urban developers, can have an impact on fish habitat and fish stocks.

Skeena steelhead populations are in a state of decline, a decline which has occurred in spite of progressively more stringent angling regulations. Current angler participation and catch rates are only one-half of what they were five years ago. Many individuals and interest groups are now concerned that steelhead stocks are, in fact, being threatened.

The Skeena River situation has been identified by the provincial government as one of the most important issues facing the angling community today. In spite of its high profile, there has been no information on the economic significance of the sport fishery in the area. This analysis was intended as a first step in filling this gap and enhancing understanding of this important fishery and its impact on the local area and the province.

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[1] John F. Fennelly, Steelhead Paradise, 1963.

[2] Thomas R. Pero, "Splendid Skeena", Trout Autumn 1990, pp. 24-29.

The intent was to document the economic impacts of the Skeena freshwater sports fishery as one part of the broader multi-faceted resource and management picture. By necessity, the study has a narrow focus and addresses economic impacts for the year 1990 and for angling in the Skeena watershed area only (and not other watersheds such as the Nass and Kitimat Rivers). Impacts are estimated for the Province as a whole and a specifically defined local area, and for the freshwater component of the sports fishery. **The study does not consider the potential of the sport fishery, nor does it consider the downward trends in use and impacts experienced in the past 5 years.**

## 1.1 Study Objectives

The overall objective of the study was to determine the gross economic impact of freshwater sport fishing activity in the area defined as the Skeena River, its tributaries and dependent lakes for the year 1990.

Specific objectives included:

- measure direct, indirect and induced economic impacts including value-added, employment and tax revenues;
- identify market profiles, origin of visitors and criteria for angler decisions in selecting fishing destinations and/or locations; and
- identify constraints to development.

Economic impacts were estimated for two geographic regions -- the local area and the province as a whole. As well, the economic impact of steelhead fishing as a distinct activity was estimated.

## 1.2 Information Sources

In order to meet the study objectives as outlined above, two surveys were conducted. The first was a survey of angling guides operating in the Skeena watershed. The second was a survey of anglers who purchased a sport fishing licence in the area during the 1990/91 fiscal year. In addition, existing data sources on the sport fishery in the area were used, as well as personal interviews with key representatives of government and local interest groups.

### Angling Guide Survey

A total of 54 surveys were sent out to the guides who operate on the Skeena watershed (copy of survey is provided in Annex A). This list was provided by the B.C. Ministry of Environment (MOE) Regional Fish and Wildlife office in Smithers. All guides received a follow-up phone call to encourage them to complete the survey.

In total, 32 surveys were returned. Of these, 5 were not used, as 90% or more of revenues, investment and operating costs were due to non-guiding activities. One guide did not operate in 1990. The remaining 26 surveys were analyzed. The survey sample represents 70% of the total guided angler days generated during the 1990 season in the watershed.

**Angler Survey**

A total of 787 questionnaires were mailed to anglers in late June/early July 1991. The names and addresses of 656 were randomly selected from the 1990/91 licenses sold at Terrace, Smithers and Burns Lake.[3] These three locations represented the greatest number of license sales within the region. In addition, names and addresses of 131 license holders living in the Lower Mainland were randomly selected. The intent was to bolster the returns from the rest of B.C. segment (many Lower Mainland steelhead anglers fishing the Skeena watershed buy their angling license outside the Skeena region). The survey results were extrapolated to the population of all anglers fishing in the area (See Annex F).

**Exhibit 1.1: Angler Survey Response**

| Angler Residence | Number Mailed | Number Returns | | |
|---|---|---|---|---|
| | | Active | Inactive | Total |
| Local Area | 238 | 68 | 13 | 81 |
| Rest of B.C. | 232 [a] | 38 | 15 | 53 |
| Rest of Canada | 90 | 25 | 6 | 31 |
| Outside Canada | 227 [b] | 62 [c] | 15 | 77 |
| **All** | **787** | **193** | **49** | **242** |

[a] 101 random license holders from local area sales plus 131 random license holders from the Lower Mainland.

[b] 181 U.S. plus 46 Europe.

[c] 51 U.S. plus 11 Europe.

In total, 242 surveys were returned -- 193 from "active" anglers who fished the Skeena watershed and 49 from "inactive" anglers who did not fish the watershed (but who may have fished other parts of the province). The nominal response rate was 31% (242/787). However, close to 75 survey questionnaires were returned as undeliverable. Consequently, the effective

[3] Systematic (1 in 10) random samples were taken within three distinct license classes until a target number of licenses were selected.

response rate of one-third was close to the normal or average response rate of 35% for mail surveys.

Originally the study was to rely only on secondary sources for angler participation and expenditure data. The limited angler survey was added to the work plan in the middle of the study as it became evident that available secondary data was inadequate. The angler survey results, although based on a limited number of 193 active angler responses, provided a credible basis for analysis. Survey angler effort and daily expenditure results were correlated with provincial angler survey results for the whole northwestern B.C. (see Section 4). As a result, any concerns related to small sample size or non-response issues should not be serious.

## 1.3 Analysis Framework

The analysis framework is illustrated in Exhibit 1.2. The economic impacts of sport fishing in the Skeena watershed represent the economic activity generated by cash expenditures by anglers in the region. An initial angler expenditure is associated with income and employment to guide operations and to local suppliers of angling goods and services (e.g., sporting good stores, gas stations etc.) These suppliers in turn can purchase goods and services from second stage local suppliers and generate a further round of impacts. In addition the local spending of wage income generates impacts in the consumer goods and service industries. The total economic impact of angling is the sum of direct industry, indirect supplier and induced consumer spending impacts.

The total magnitude of income and employment impacts depends on the absolute level of expenditures as well as the multiplied effects on the rest of the region. The regional multiplied effect of the initial level of expenditures, in turn, depends on the economic structure of the region, particularly the import content of goods and services purchased. Larger regions have a larger "multiplier effect" since a greater share of input purchases would be made within the region.

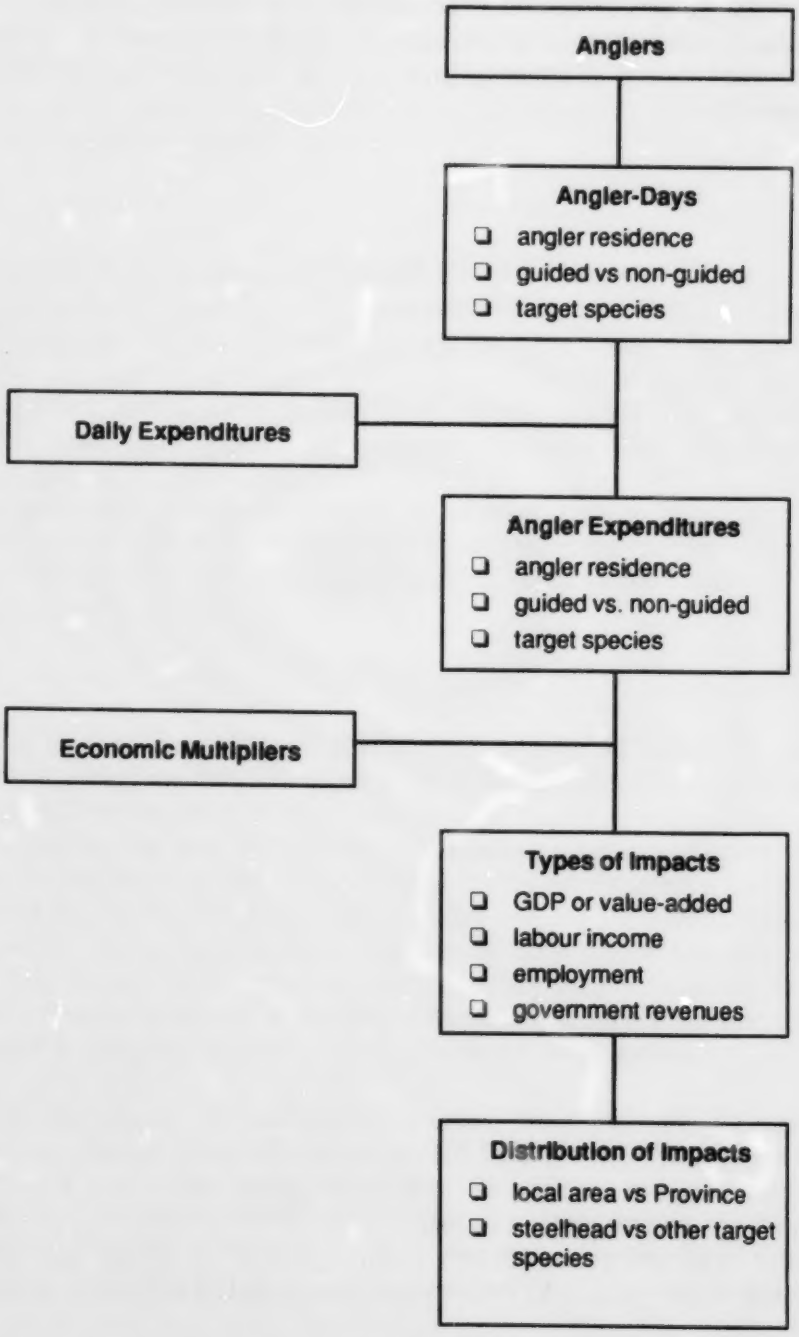
The following impact measures were employed:

- Gross Domestic Product (GDP) or value-added;
- labour income;
- employment;
- government resource tax revenues.

Economic impacts were estimated for two referent groups -- the local area and the province of British Columbia. Finally, the share of total impacts attributable to steelhead angling was estimated.

**The economic impacts of the sports fishery and the economic value of the sports fishery are two completely different concepts.** This study addressed the former using the above framework.

**Exhibit 1.2: Economic Impacts Associated with Sportfishing in the Skeena River Watershed**



Economic impacts are generally considered to be gross impacts in the sense that no corrections are included for the possibility that expenditures would have been made in the absence of the fishing activity, and for the alternative uses of the capital and labour in the economy.

In contrast, economic value is gross benefits of fishing less the economic (opportunity) costs of labour, capital and other fishing inputs in their next best alternative use. Opportunity, and hence economic costs, reflect the viewpoint that using resources for one purpose precludes their use to generate benefits in alternative uses. Further discussion of the differences between the two concepts is given in Annex B.

# 2.0 Overview of the Fishery

The Skeena watershed is one of the most productive areas for sport fishing in the province. The watershed supports a wide variety of salmon and freshwater species of fish, including very large, trophy size salmon and steelhead. The Skeena River and its tributaries are noted internationally for wild steelhead fishing. As well, the Skeena River is well known in Europe for chinook salmon fishing. Both guided and non-guided (self-directed) angling occurs. Lure and fly fishing are the predominant angling methods.

## 2.1 Study Area

The study area as illustrated in Exhibit 2.1 encompasses all of the rivers, creeks, and lakes within the Skeena watershed. The watershed begins at the freshwater boundary at the month of the Skeena, and literally includes hundreds of lakes/streams and thousands of lakes. Major waterbodies supporting angling activity in the watershed include the Skeena mainstem, the Babine River, Babine Lake, Bulkley River, Kitsumkalum River, Morice River, Kispiox River, Lakelse River, the Zymoetz (Copper) River, the Sustut River and the Gitnadoix River.

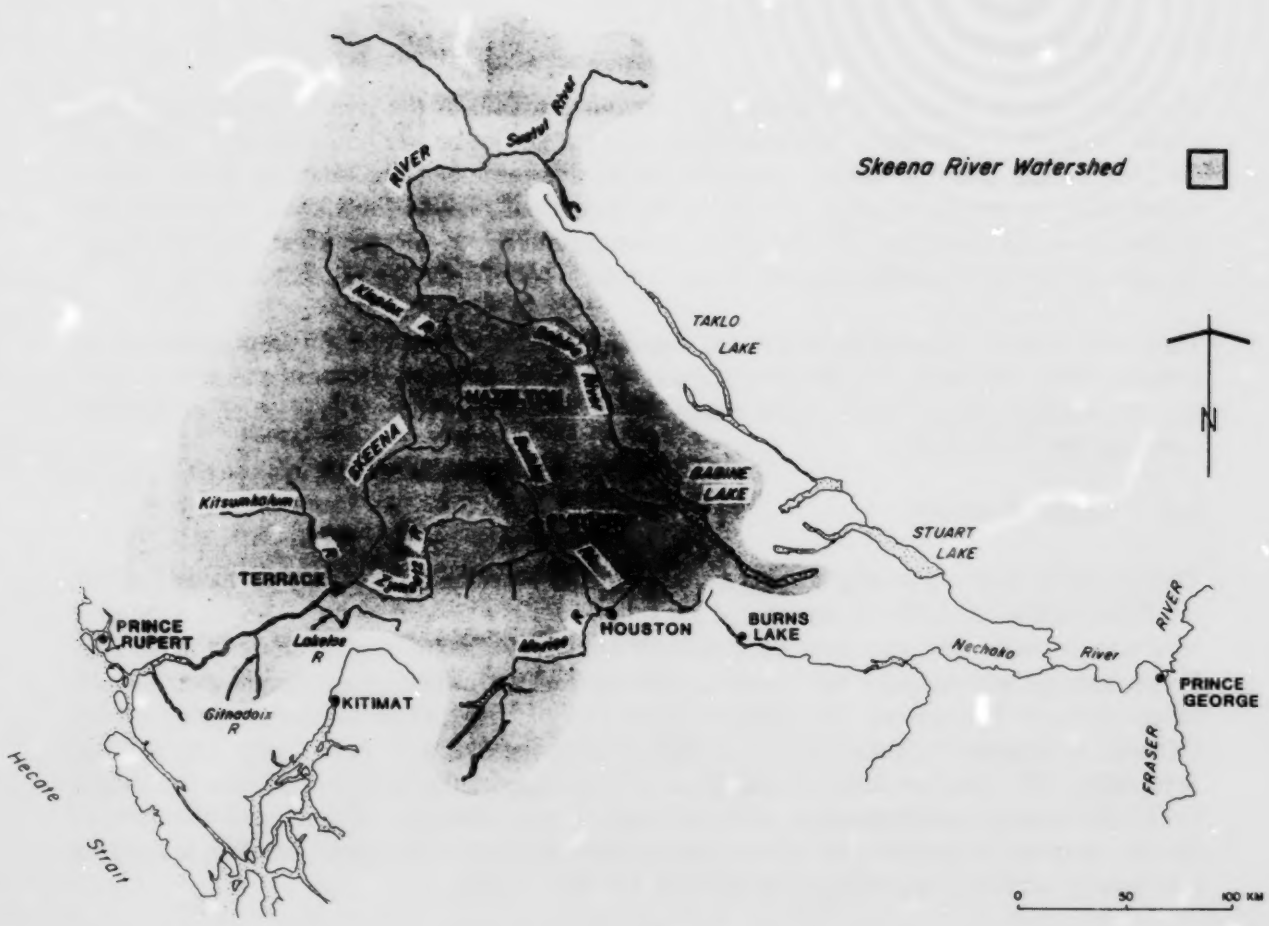
There are several communities within the watershed which benefit directly from sport fishing activity. They include Prince Rupert, Terrace, Hazelton, Smithers, Houston and Burns Lake. For the purposes of this study, these communities (and surrounding villages such as Telkwa) comprise the "local area".

## 2.2 Types of Activity

There is great diversity of angling opportunities in the watershed. A variety of species of fish are found during the different seasons which support sport fishing activity. The main chinook season in the watershed runs from April through August. Coho are caught primarily in the Fall. Freshwater species such as Dolly Varden, rainbow trout and whitefish are caught over a much longer Spring to Fall season. The steelhead fishery encompasses a late winter and spring fishery followed by a summer fishery targeted at fish entering the Skeena between early July and late September. The summer steelhead traditionally have supported a mainstem Skeena bar fishery from July through mid-September, and a tributary fishery from late August until the onset of winter. Because of special problems and management interest for steelhead, angling activity for steelhead is identified separately from activity for other species.

The fishery attracts an international clientele from the United States and Central Europe (Germany, Austria, Switzerland) for guided fishing trips. This demonstrates that the Skeena fishery is a world class fishing destination. In addition, residents from the Pacific Northwest and British Columbians visit the area as part of a motor touring trip through the province, i.e., "rubber tire" traffic. Alternately, others visit the area primarily to fish. These anglers house themselves in self-contained recreational vehicles (RV's), or utilize motels, hotels or campsites.

## Exhibit 2.1: The Skeena River Watershed



## 2.3 Level of Activity 1990

In calendar year 1990 an estimated 190,000 angler-days of angling activity occurred in the Skeena watershed area (one angler fishing all or part of one day is an angler-day).[1] Of this total 36,900 angler days were targeted for steelhead and 153,100 for other species, as illustrated in Exhibit 2.2. The largest angler segment was local residents as opposed to visitors from outside the region. Based on Exhibit 2.2 it was estimated that:

- 66% of total angler-days in the region accrued from local resident activity,
- 6% of total angler-days were guided, and
- 19% of total angler-days were targeted at steelhead (42% for salmon and 39% for freshwater species).

**Exhibit 2.2: Estimated Angler-Days in the Skeena Watershed 1990**

| Target Species /Type | Angler Residence | | | | |
|---|---|---|---|---|---|
| | Local | Rest of B.C. | Rest of Canada | Outside Canada | Total |
| ***Steelhead Days*** | | | | | |
| Guided | 100 | 300 | 600 | 5,000 | 6,000 |
| Non-Guided | 20,800 | 6,600 | 1,200 | 2,300 | 30,900 |
| All | 20,900 | 6,900 | 1,800 | 7,300 | 36,900 |
| ***Other Species Days*** | | | | | |
| Guided | 100 | 300 | 600 | 5,000 | 6,000 |
| Non-Guided | 104,000 | 17,800 | 12,600 | 12,700 | 147,100 |
| All | 104,100 | 18,100 | 13,200 | 17,700 | 153,100 |
| ***All Days*** | | | | | |
| Guided | 200 | 600 | 1,200 | 10,000 | 12,000 |
| Non-Guided | 124,800 | 24,400 | 13,800 | 15,000 | 178,000 |
| All | 125,000 | 25,000 | 15,000 | 25,000 | 190,000 |

Source: Derived from the guide and angler surveys conducted for this study as well as available secondary data (See Annex F).

[1] The estimates were derived from the guide and angler surveys conducted for this study, and from secondary data. The estimation procedure is discussed in Annex F.

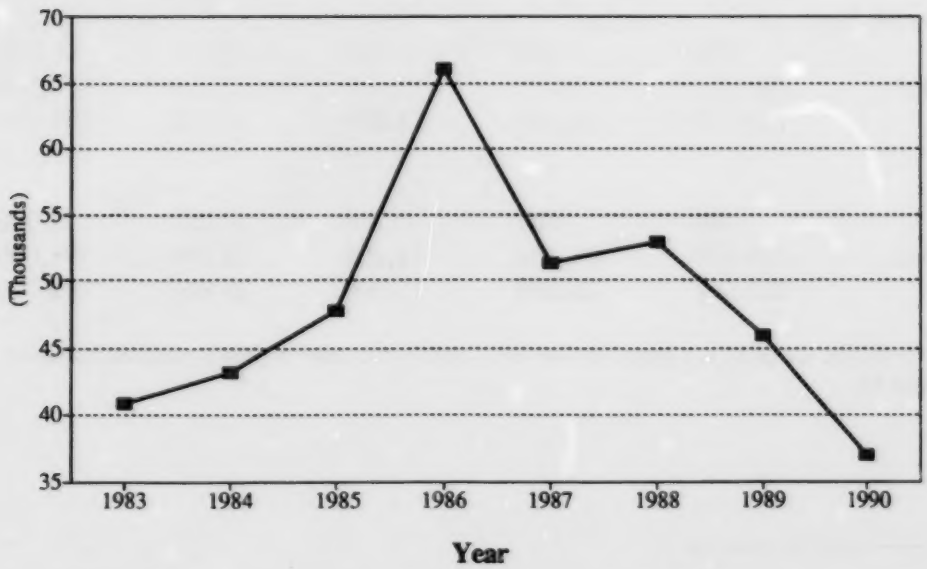
Differences existed between guided and non-guided anglers. Guided anglers focused more on steelhead than other species, and were more likely to come from out-of-country than were non-guided anglers.

Approximately half of the angler-days for "other" species were targeted at salmon species, mainly chinook and coho. Approximately 75,000 angler-days were directed at freshwater species such as rainbow trout, lake trout (char), whitefish, Dolly Varden, etc. Angling for freshwater species was a significant component of angling activity in the watershed.

Approximately 20-25% of total provincial angling days for steelhead occurred in the Skeena watershed. An even greater share (in excess of 50%) of provincial steelhead angler effort by out-of-province anglers occurred in the watershed.

The 1990 year was the single "snapshot" year chosen for analysis, but may not be typical of angler effort in recent years. For example, 1990 steelhead effort was only one half of the 66,100 steelhead angler days in 1986, a year of very strong steelhead returns to the Skeena. The current 1990 level of 36,900 steelhead days was representative of steelhead angler effort in the 1970's and early 1980's, but was less than steelhead effort in the late 1980's (see Exhibit 2.3).

**Exhibit 2.3: Steelhead Angler-Days in the Skeena Watershed 1983 to 1990**



The angler effort estimates did not include angling in saltwater that is targeted at Skeena fish stocks. Canada Fisheries and Oceans (DFO) estimated that 1990 angling effort in the Prince Rupert Area 4 was 4,000 boat days[2] (or approximately 10,000 angler-days).

## 2.4 Regulations

There is joint provincial-federal regulation of the fish resources in the Skeena watershed. Salmon is managed by the federal government in both tidal and non-tidal waters of British Columbia. The provincial government manages the steelhead resource and freshwater species of fish in non-tidal waters. Because steelhead are anadromous, federal and foreign government policies and regulations for commercial fisheries in tidal waters greatly affect the steelhead resource and provincial management opportunities.

### *Classified Waters*

The Province introduced a new management system in fiscal year 1990/91 (hereafter called year 1990). The purpose of this new system was threefold[3]:

- to provide a diversity of angling opportunities;
- to maintain quality fishing; and
- to improve regulation of the angling guide industry.

The system classified water systems into three designations -- Class 1, Class 2 and Unclassified.

**Class 1 waters** are remote, pristine, wilderness waterbodies with significant fisheries value that are largely accessible only by boat or aircraft. For Class 1 waters all guided and non-guided angling use is managed, i.e., an annual use level is specified, and angler-days regulated according to a water-specific management plan.

**Class 2 waters** are more accessible, but still represent a quality fishing experience. Class 2 waters typically have more local use than Class 1 waters. On these waters angling guides are limited to the guided angler-days specified in the water-specific management plan. Angling use by non-B.C. residents can be limited but, unlike Class 1 waters, use by B.C. residents is not restricted.

**Unclassified waters** have no special restrictions in terms of allowable angler-days by residents or non-residents of the province.

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[2] Dave Peacock, DFO Prince Rupert, pers. comm.

[3] The discussion in this section and the section on regulations was taken largely from: British Columbia Ministry of Environment, British Columbia Freshwater Fishing Regulations Synopsis, April 1, 1990 to March 31, 1992, Victoria.

The Skeena watershed has 4 of the 5 Class 1 waters in the province, and 13 of the 42 Class 2 waters (Exhibit 2.4). Clearly the watershed has been identified as the major quality freshwater fishing area in the province.

**Exhibit 2.4: Classified Waters in Skeena River Watershed**

| Class 1 | Class 2 |
|---|---|
| Babine River | Bulkley River |
| Gitnadoix River | Ecstall River |
| Sustut River | Kispiox River |
| Zymoetz (above Limonite Cr.) | Kitseguecla River* |
| | Kitsumkalum River |
| | Kitwanga River* |
| | Kluatantan River |
| | Lakelse River* |
| | Morice River |
| | Skeena (Exchamsiks - 1.5 km above Kitsumkalum River) |
| | Skeena (above Zymoetz River) |
| | Suskwa River* |
| | Zymoetz (below Limonite Cr.) |

* no guiding allowed

The restrictions for each classified water only apply to a specified time period. For example, restricted use of the Sustut River only applies from September 1 to October 31 of the year. Use in the other ten months is not restricted.

***Catch Limits***

Catch limits vary by species, size of fish, time of year and waterbody. Highlights for certain species are presented below for the Skeena watershed area in 1990.

| | Catch Limits | | |
|---|---|---|---|
| | **Daily** | **Annual** | **Possession** |
| Chinook (over 50 cm) | 1 | 10 | 2 |
| Coho (over 50 cm) | 1 | NA | 2 |
| Pink or Sockeye | zero | zero | zero |
| Steelhead Trout* | 1 | 1 | 1 |
| Other Trout & Char | 5 | NA | 10 |
| Whitefish | 25 | NA | 50 |
| Arctic Grayling | 8 | NA | 16 |

* June 1 to October 31

Many of the upper tributaries of the Skeena River, such as the Morice and the Kispiox Rivers have compulsory release of steelhead regulations in the Fall. As well, chinook fishing is closed from the day after the August Civic Holiday to December 31 in the Lower Skeena River.

In 1991 from mid July to mid August Canada Fisheries and Oceans (DFO) opened the Skeena River to angling for sockeye and pink salmon for the first time since the 1950's.

***Licence Fees***

All individuals choosing to fish in non-tidal waters must be in possession of a basic freshwater angling licence. Any angler fishing for steelhead must also purchase a steelhead licence which is a stamp that is affixed to the basic licence.

Licence fees vary by angler residences and by type (6-day versus annual).

| | Basic Licence | | Steelhead |
|---|---|---|---|
| | 6-day | Annual | Licence |
| Resident of B.C. | $10 | $17 | $ 7 |
| Other Canadian | $11 | $19 | $17 |
| Non-Resident of Canada | $15 | $27 | $42 |

Senior citizens of British Columbia over 65 years of age can receive an annual basic licence for a $1 fee.

If an angler fishing in non-tidal waters wants to catch and keep a chinook salmon over 50 cm in length, they must possess a chinook conservation stamp. The chinook stamp costs $3 for all anglers.

In addition to the above licences, anglers fishing classified waters must pay a daily fee.

| | Daily Fee | |
|---|---|---|
| | Class 1 | Class 2 |
| Resident of B.C. | $1/day | $1/day (guided only) |
| Non-Resident of B.C. | $20/day | $10/day |

Guides also pay annual licence fees and daily fees. A guided operation pays:

- $200 per year for a basic guide licence (one per operation),
- $50 per person per year for each assistant guide, and;
- $1 per day for each day of quota allocation on Class 1 and 2 waters (regardless of whether the quota was actually used).

The provincial system of freshwater angler and guide licence fees differentiated by quality of the fishing experience is more advanced than that for tidal angling in British Columbia.

# 3.0 Profile of Fishing Guide Operations

The guiding of anglers for steelhead, chinook, coho and other species is an important and high profile activity in the Skeena watershed area. The vast majority of clients are non-Canadian and come solely to the region in order to fish.

In this section we outline the nature and extent of the guiding industry in terms of several indicators -- number of operations, guided days, client origin, revenues and so on. The industry profile was derived from two main data sources -- the survey of Skeena area guides conducted for this study and the 1990 summary reports submitted to the Ministry of Environment (MOE) by guides.

## 3.1 Number and Size of Operations

In 1990, there were 54 active guiding operations in the Skeena River watershed area, i.e., 54 operations guided at least one day in the area. Some of these operations were very small and guided under 10 days a year. Others were substantial, high volume operations with over 1,000 guided days.

The number of operations by size class according to MOE guide reports was[1]:

| Angler-Days Guided | Number of Operations |
|---|---|
| 1-49 | 11 |
| 50-99 | 11 |
| 100-199 | 12 |
| 200-499 | 11 |
| 500-999 | 6 |
| 1,000+ | 3 |
| Total | 54 |

The categories include guided days both within and outside the study area. The Kitimat River outside the Skeena watershed area is a major guiding area.

## 3.2 Product Profile and Pricing

Two main types of guide operations exist. Guides in the Smithers and Upper Skeena area cater mainly to fly fishermen who practice catch and release. The majority of clients are Americans.

[1] MOE guide reports to date indicate 52 active operations. In addition, two respondents to our guide survey indicated that they fished in the study region although MOE does not have a guide report from them. These were included in the analysis.

Clients of guides in the Lower Skeena near Terrace in contrast are mainly bar fishermen who seek a consumptive, kill fishery. The majority of clients come from Central Europe.

The industry offers a variety of fishing experiences or packages to anglers. Anglers can fish more than one species in one day. For example, many anglers fish steelhead on a "catch and release" basis. They also may fish chinook or coho on the same day on a "kill" basis (sometimes to provide food for a shore lunch).

The average package cost was approximately $220 per day Canadian. There was a wide range in package costs within the industry, from $100 per day to over $400 per day. Most packages included food and accommodation (package costs excluded booking agent fees).

Fifty-percent (50%) of the guides offered additional activities to sport fishing. These activities were offered to their sport fishing clients or were used to attract other clients who do not sportfish. The range of activities included:

- 29% wildlife viewing, nature or wilderness tours
- 21% sightseeing
- 17% hunting
- 17% jet boat, drift boat or river tours
- 13% photography tours
- 4% resort
- 4% hiking
- 4% air charters

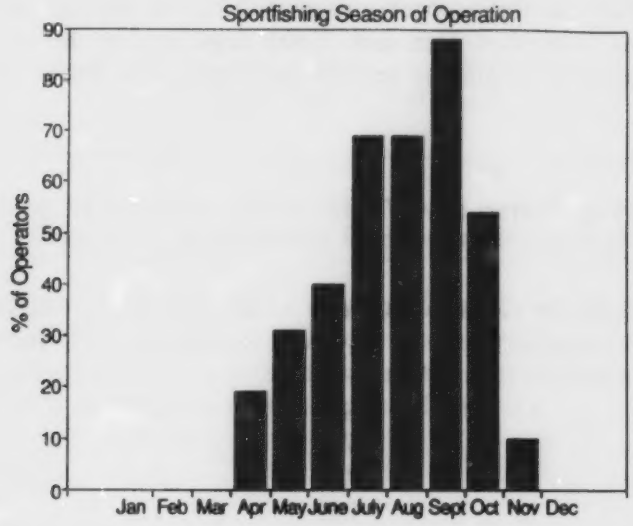
It was common for guides to smoke and vacuum sealpack salmon for travel to the U.S. or Europe for their clients.

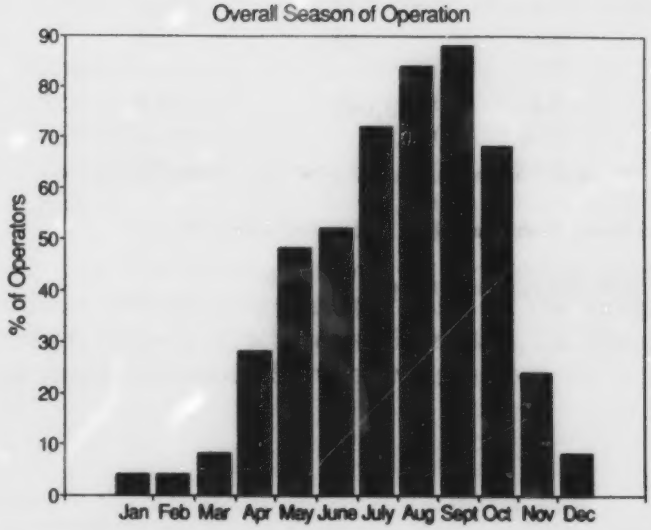
### 3.3 Season of Operation

The sport fishing season for guides takes place from April through November of the year. The peak months of guiding activity were July through October (Exhibit 3.1). Guiding for chinook occurred early in the season with guiding for steelhead predominating in late August through early November.

Some guides operated within a narrow season, while others were able to extend their season by offering additional products or services. The season for guiding however is limited by the timing of the runs of fish.

## Exhibit 3.1: Season of Operation For Angling Guides, 1990



The guiding season can also be limited by weather, specifically rainstorms and floods on tributaries in October. Fishing conditions are usually much better prior to October but the strength of the early part of the summer steelhead run has been very weak in recent years. As a result, the guiding season has been shortened.

### 3.4 Days Guided

MOE guide reports indicated that the 54 operators guided 15,400 days in 1990 (rounded) -- 12,000 days in the Skeena watershed area and 3,400 days outside the area. The main waterbodies within the watershed for guiding activity are displayed in Exhibit 3.2.[2]

**Exhibit 3.2: Guided Days by Waterbody Within the Skeena River Watershed 1990**

| | Number Guides Licensed | Quota Days | Days Actually Guided | % Guided Days for Steelhead |
|---|---|---|---|---|
| Skeena River[a] | 42 | 6,831 | 5,473 | 33% |
| Babine River[b] | 4 | 1,706 | 2,656 | 65% |
| Bulkley River[b] | 7 | 1,448 | 1,067 | 96% |
| Kitsumkalum River[b] | 12 | 861 | 739 | 21% |
| Sustut River[b] | 2 | 750 | 486 | 83% |
| Morice River[b] | 3 | 433 | 390 | 100% |
| Kispiox River[b] | 4 | 393 | 279 | 78% |
| Zymoetz River[b] | 4 | 450 | 262 | 95% |
| Gitnadoix River[b] | 4 | 132 | 132 | 0% |
| Other Waters[c] | NA | 45 | 528 | 5% |
| **All Waters** | **54** | **13,049** | **12,012** | **50%** |

[a] The Skeena River is comprised of 4 distinct sections, 2 of which are classified waters.
[b] Classified waters.
[c] Ecstall River, Kluatantan River, freshwater lakes, unclassified waters etc.

Source: MOE Smithers administrative data and guide reports.
Exhibit C.1, Annex C.

[2] Some small differences exist between Exhibit 3.2 figures on guide days and MOE records due to the inclusion of two guides who responded to the guide survey, but who had not submitted a guide report to MOE.

Days guided can be greater than the quota days allocated to guides since the quota restriction applies only to a specific time period i.e., guiding activity is unrestricted outside the period.

Half of the guided days within the watershed were for steelhead.[3] Very few guided days outside the watershed were for steelhead.

| | Guided Days by Target Species | | | |
|---|---|---|---|---|
| | **Steelhead** | **Salmon** | **Other** | **Total** |
| Skeena Watershed Area | 6,000 | 4,700 | 1,300 | 12,000 |
| Other Areas | 200 | 2,400 | 800 | 3,400 |
| **Total** | **6,200** | **7,100** | **2,100** | **15,400** |

One third of the guided days on the Skeena River mainstem were for steelhead.

Guide days were split evenly between Lower Skeena guides working that part of the watershed below the Zymoetz River (6300 guide days) and Upper Skeena guides (5700 guide days). The Upper Skeena guides had 70% of guide days targeted at steelhead whereas the Lower Skeena guides had only 30% of guide days targeted at steelhead.

### 3.5 Client Origin

Over 90% of guided angler-days flow from out-of-province clients with over 80% from clients living outside Canada. The client origin data from the guide survey suggested the following client mix (these numbers have been weighted based on angler days):

| **Client Origin** | **Number of Angler Days** | |
|---|---|---|
| Local Area | 200 | 1% |
| Rest of B.C. | 800 | 5% |
| Rest of Canada | 1,500 | 10% |
| Outside Canada | 12,900 | 84% |
| ALL | 15,400 | |

The clients from outside Canada were primarily US and German residents. The guiding fishing business in the Skeena area has a high "export" content. The smaller guiding operations (less than 100 guided days) typically attracted closer in markets, i.e. B.C. residents, while the larger operations predominantly attracted US and overseas markets.

[3] If an angler fished for steelhead and other species on a particular day, the day was counted as a steelhead day and not a "salmon" or "other" day.

## 3.6 Revenues

Total revenues for the 54 operations from sport fishing guiding in and outside the Skeena watershed were an estimated $3.4 million in 1990, or an average of $63,000 per operation (Exhibit 3.3). The share attributable to guiding activity in the Skeena watershed was $2.6 million or 77%.

There was a wide distribution of income. Most of the 22 operations with under 100 guided days would have less than $15,000 in revenues. Most of the 9 operations with over 500 days would have revenues in excess of $100,000.

## 3.7 Employment

The Skeena guiding industry provided an estimated 187 jobs directly -- 54 for guides (one for each operation), 67 for assistant guides and 66 for other workers.

These jobs were seasonal. For example, guides worked 3.5 months on average. The result is that the 187 industry jobs in 1990 represented 12,000 work days including days spent on marketing and promotions, or 55 person years (based on 220 work days per year).

The average year-round employment level was 1 person per operation. This translated into an average revenue per person-year employment of $62,000.

## 3.8 Wages Paid

Wage income earned by employees represented $1.1 million in 1990 or 32% of industry revenues. As total employment was 55 person-years, the average annual wage was $20,000 (approximately $90 per day). The wage figures included a wage to the guide operator.

Most guide operations were owner-operated and many employed family labour. In these cases, the decision by the operator as to what wage to draw and what surplus to leave in the business was arbitrary. Also, some workers received food and lodging, and accordingly received a lower wage than if they had to pay directly for their own accommodation and meals.

## 3.9 Investment

The total of all capital investment to date for the 54 active operations on an original or purchase cost basis was an estimated $6.2 million in 1990. That is, the industry has invested approximately $1.80 for each $1 of annual revenue. The capital investment strictly dedicated to guiding of anglers would be less than $6.2 million because some of the investment was used to generate revenues from other activities such as nature/wildlife tours.

## Exhibit 3.3: Economic Profile of the Skeena Guide Industry, 1990.

| | Total | Average per Operation |
|---|---|---|
| **No. Operations** | 54 | 1.0 |
| **Days Guided** | | |
| For Steelhead | 6,200 | 115 |
| For Other Species | 9,200 | 170 |
| Total | 15,400 | 285 |
| **Days Guided** | | |
| Within Skeena Watershed | 12,000 | 220 |
| Outside Watershed | 3,400 | 65 |
| Total | 15,400 | 285 |
| **Revenues** | $3.4 million | $63,000 |
| **Revenue Distribution** | | |
| Wages and Salaries Paid[a] | $1.1 million | $21,000 |
| Purchases Goods and Services | $1.5 million | $28,000 |
| Capital Return Including Interest Payments, Depreciation, Taxes, Profits | $0.8 million | $14,000 |
| Total | $3.4 million | $63,000 |
| **Capital Investment[c]** | $6.2 million | $115,000 |
| **Positions/Jobs** | | |
| Guide | 54 | 1.0 |
| Assistant Guides | 67 | 1.2 |
| Other | 66 | 1.2 |
| Total | 187 | 3.4 |
| **Days Worked** | | |
| Guide | 3,700 | 69 |
| Assistant Guides | 3,700 | 68 |
| Other | 4,600 | 85 |
| Total | 12,000 | 222 |
| **Person-Years Employment[b]** | 55 | 1.0 |

a. Includes a wage to the guide operator.
b. Days worked divided by 220.
c. Original or purchase cost basis.

Source: Estimates derived from the results of the guide survey and MOE guide reports.

Capital investment in the industry was broken down into the following components:

| | Investment | % of Total |
|---|---|---|
| Land or Land Lease | $1.1 million | 18% |
| Boats | $1.3 million | 21% |
| Vehicles | $0.8 million | 13% |
| Buildings & Facilities | $2.7 million | 43% |
| Other | $0.3 million | 5% |
| | $6.2 million | |

Personal interviews with guides suggested a current market value of approximately $200 for a day of guide quota. This would imply an aggregate quota value of $2.6 million for the 13,000 quota days in the Skeena watershed area.

### 3.10 Supply Purchases

The guide industry provided linkages to other local and provincial economic sectors through the purchases of goods and services. In 1990, guide operators purchased an estimated $1.5 million in supplies broken down approximately as follows:

| | Purchases from Suppliers | % Purchased Locally |
|---|---|---|
| Repairs & Maintenance | $ 180,000 | 100% |
| Food & Accommodation | 450,000 | 97% |
| Transportation | 340,000 | 90% |
| Marketing, Promotion, Travel | 130,000 | 40% |
| Administration & Insurance | 170,000 | 77% |
| Other | 230,000 | 90% |
| Total | $1,500,000 | 87% |

Approximately 87% of expenditures on goods and services were made locally.

Supply purchases represented 44% of the $3.4 million in revenue in 1990. Wages paid comprised another 32%. The residual (24%) represented a gross return to capital to cover interest payments on borrowed capital, a depreciation reserve for the recovery of capital, taxes including permits and licenses, and after-tax profit or return to capital (Exhibit 3.3).

# 4.0 Angler Profile

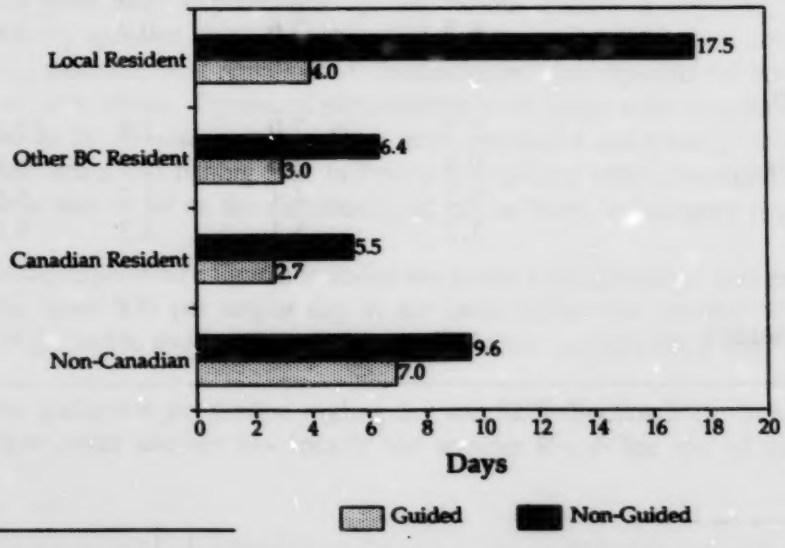
The anglers fishing the Skeena watershed, as well as the fishing opportunities in the watershed are varied. Significant differences in fishing intensity, target species, motivations, expenditure levels and interests occur between guided and non-guided anglers, and among anglers from different origins. For example, the local area angler fishes more days and spends less per day than does the visiting angler to the region. These differences are outlined in the section.

The angler profile was derived from the results of the mail survey of anglers conducted for this study. To the extent possible, survey results were correlated with other available information on the Skeena recreational fishery.

## 4.1 Average Days Fished

Days fished in the local area varied by residence of angler and whether the angling trip was guided. The average local angler fished 17.5 days in the local area. Guided anglers fished substantially less days on average than did non-guided anglers (Exhibit 4.1).[1] Although the survey sample sizes for the guided component were small, it does appear that guided trips of European anglers were longer than for U.S. anglers.

**Exhibit 4.1: Average Days Fished by Angler Type**




[1] Lewynsky and Olmsted provided information on the seasonal pattern of guided and non-guided angler activity on specific waters. V.A. Lewynsky and W.R. Olmsted, "Angler Use and Catch Surveys of the Lower Skeena, Zymoetz (Copper), Kispiox and Bulkley River Steelhead Fisheries 1989", Draft Report Prepared for MOE Smithers, March 1990.

The survey results were consistent with those from the 1985 survey of sport fishing in British Columbia[2]. The 1985 survey indicated that resident anglers in the MOE Skeena Resource Management Region fished an average of 22.3 days -- 14.5 days on rivers and streams and 7.8 days on lakes. One would expect that average days fished in the Skeena watershed by local anglers would be less than days fished in the much larger Skeena Resource Management Region[3]. For example, the Kitimat River, Francois Lake, and Ootsa Lake are not in the watershed but many local anglers fish these waters. The 17.5 average days fished for local anglers from our survey therefore appears reasonable.

## 4.2 Target Species

The target species of anglers varied significantly by angler class. Guided U.S. anglers targeted almost exclusively at steelhead. Canadian and European guided anglers targeted more on chinook or coho salmon (see Exhibit 4.2). Non-guided anglers targeted much more on chinook and coho salmon and on freshwater species than on steelhead.

**Exhibit 4.2: Average Days Fished By Target Species for Skeena Watershed Anglers 1990**

| | Average Days by Target Species | | | |
|---|---|---|---|---|
| | Steelhead | Chinook or Coho | Other | Total |
| ***Guided Anglers*** | | | | |
| Local Resident | 0.0 | 4.0 | 0.0 | 4.0 |
| Other B.C. Resident | 1.5 | 1.5 | 0.0 | 3.0 |
| Canadian Resident | 1.4 | 1.3 | 0.0 | 2.7 |
| Non-Canadian | 4.2 | 2.6 | 0.2 | 7.0 |
| ***Non-Guided Anglers*** | | | | |
| Local Resident | 2.7 | 7.0 | 7.8 | 17.5 |
| Other B.C. Residents | 0.5 | 2.6 | 3.3 | 6.4 |
| Canadian Resident | 0.2 | 4.1 | 1.2 | 5.5 |
| Non-Canadian | 1.2 | 5.1 | 3.3 | 9.6 |

Source: Survey of anglers.

[2] Michael Stone, British Columbia Freshwater Results of the 1985 National Survey of Sport Fishing, MOE, Victoria, September 1987.

[3] The Skeena Resource Management Region includes the Queen Charlotte Islands and extends North to the Yukon border.

The above data were averages for all angler respondents, including those who did not fish for steelhead but who fished for other species. Steelhead Harvest Analysis data indicated that among all steelhead anglers in the watershed, guided plus non-guided, the average number of steelhead days fished was 6.9, 3.9, 4.7 and 5.7 for "locals", other B.C. residents, out-of-province residents and non-Canadians respectively (Annex D).

Survey data on the frequency of purchasing steelhead licenses (not everyone who buys a steelhead licence fishes for steelhead), or chinook stamps was also an indication of angling intent.

| | Share Purchasing | |
|---|---|---|
| | **Steelhead Licence** | **Chinook Stamp** |
| Guided Total | 65% | 41% |
| Non-Guided Total | 35% | 61% |

This data reinforces the conclusion that guided anglers target more on steelhead, and less on chinook than do non-guided anglers. (See Exhibit E.1, Annex E).

### 4.3 Average Expenditure Levels

Anglers spend money on food, accommodation, fishing gear, travel costs, fishing guide packages and other items in pursuit of Skeena watershed fishing opportunities. Guided anglers generally spend considerably more than non-guided anglers, and anglers visiting from outside the local area spend more than local area anglers.

Exhibit 4.2 gives daily expenditures for the various classes of anglers. Daily expenditures included money spent on durable boating and fishing equipment and on non-durable items (eg. food, travel, gasoline, boat rentals etc.) Expenditures were reported for both the local area and the province as a whole. Provincial expenditures were larger since non-local anglers can spend money outside the Skeena region on food, accommodation and travel in transit. Local anglers can purchase boats and fishing gear in Prince George and other communities outside the local area. Component detail on the distribution of expenditures by category is given in Annex E.

The provincial expenditure figures included the amount spent locally. For example, the average local angler spent $39 per angler-day in the local region plus another $6 in the rest of the province (e.g., tackle and boating equipment in Prince George) for a total of $45.

The average guide cost per guided angling day was $220 (Section 3.2). In addition, the average guided angler spent another $64 locally and another $94 in the rest of the province per day fished.

The 1985 survey of Sport Fishing estimated average daily expenditures by anglers living in the Skeena Resource management Region to be $20 per angler-day in direct expenditures[4]. Skeena anglers spent an additional $12 per day on capital items of fishing equipment and boating equipment[5]. The $45 direct plus capital daily cost for local anglers in 1990 as estimated in this study is somewhat above the $32 daily cost in 1985 (even after allowing for cost increases due to inflation). The discrepancy is likely attributable to the much greater use of specialized river boats on the Skeena today as compared to five years ago.

**Exhibit 4.3: Expenditure Levels of Anglers in the Skeena Watershed 1990**

| Angler Type/Residence | Average $ Spent per Angler-Day | |
|---|---|---|
| | Locally | In-Province |
| ***Guided Angler*** | | |
| Local Resident | $125 | $125 |
| Other B.C. Resident | 223 | 316 |
| Canadian Resident | 306 | 399 |
| Non-Canadian | 288 | 384 |
| **All** | **284** | **378** |
| ***Non-Guided Angler*** | | |
| Local Resident | $39 | $45 |
| Other B.C. Resident | 61 | 83 |
| Canadian Resident | 110 | 132 |
| Non-Canadian | 85 | 119 |
| **All** | **51** | **63** |
| ***Guided plus Non-Guided**** | | |
| Local Resident | $39 | $45 |
| Other B.C. Resident | 65 | 89 |
| Canadian Resident | 126 | 153 |
| Non-Canadian | 166 | 225 |
| **All** | **66** | **83** |

* Weighted average of guided and non-guided daily expenditures.
Source: Survey of anglers

[4] Michael Stone, Economic Values and Impacts of Freshwater Sport Fishing in British Columbia, Fisheries Management Report no. 91, Ministry of Environment and Parks, Victoria, 1988.

[5] The $12 per angler-day is an estimate as the Stone study did not report capital expenditures by category for each region of angler residence. Average daily capital expenditures on fishing and boating equipment for all resident anglers in the province was $11. Stone 1988 op.cit.

## 4.4 Motivation for Visiting Area

In the angler survey non-local anglers were asked to identify the main purpose of their trip to the Skeena watershed region. The vast majority of guided anglers indicated that "fishing" was their primary trip purpose. Approximately half of non-guided anglers identified "fishing" as the main trip purpose.

| | % Share Identifying Fishing as Main Trip Purpose |
|---|---|
| ***Guided Anglers*** | 86% |
| ***Non-Guided Anglers*** | |
| B.C. Residents | 28% |
| Canadian Residents | 77% |
| Non-Canadians | 58% |
| All Non-Guided | 51% |

Many Canadian anglers from other provinces, especially Alberta, visited the Skeena region solely to fish. The most common reason other than fishing cited for visiting the Skeena region was "visiting friends and relatives" (See Exhibit E.4, Annex E).

## 4.5 Interest in Skeena Watershed Area

The majority of the 1990 anglers had fished previously in the area. An estimated 57% of guided anglers and 74% of non-guided anglers were repeat anglers to the Skeena watershed. Not surprisingly the local anglers exhibited the highest percentage of repeat anglers (93%).

| | % Share Repeat Anglers |
|---|---|
| ***Guided Anglers*** | 57% |
| ***Non-Guided Anglers*** | |
| Local Residents | 93% |
| Other B.C. Residents | 69% |
| Canadian Residents | 41% |
| Non-Canadians | 65% |
| All | 74% |

In addition to past interest in the area, 84% of guided and 92% of non-guided anglers were also interested in returning to the Skeena watershed to fish. These numbers reflect the high percentage (99%) of locals who fish every year in the area. Those anglers which have long distances to travel to the Skeena area were less likely to return in 1991 but would do so within the next five years.

**Exhibit 4.4: Interest in Returning to Skeena Watershed Area to Fish**

| | % Plan to Return | % Plan to Return In* | | |
|---|---|---|---|---|
| | | 1991 | Next 2 Years | Next 3-5 Years |
| *Guided* | 84% | 50% | 43% | 7% |
| *Non-Guided* | | | | |
| Local Resident | 99% | 98% | 2% | 0% |
| Other B.C. Resident | 92% | 52% | 24% | 24% |
| Canadian Resident | 91% | 50% | 35% | 15% |
| Non-Canadian | 77% | 38% | 50% | 12% |
| All Non-Guided | 92% | 71% | 20% | 9% |

* Percentages of those planning to return.

Source: Survey of anglers who purchased a license in Skeena area.

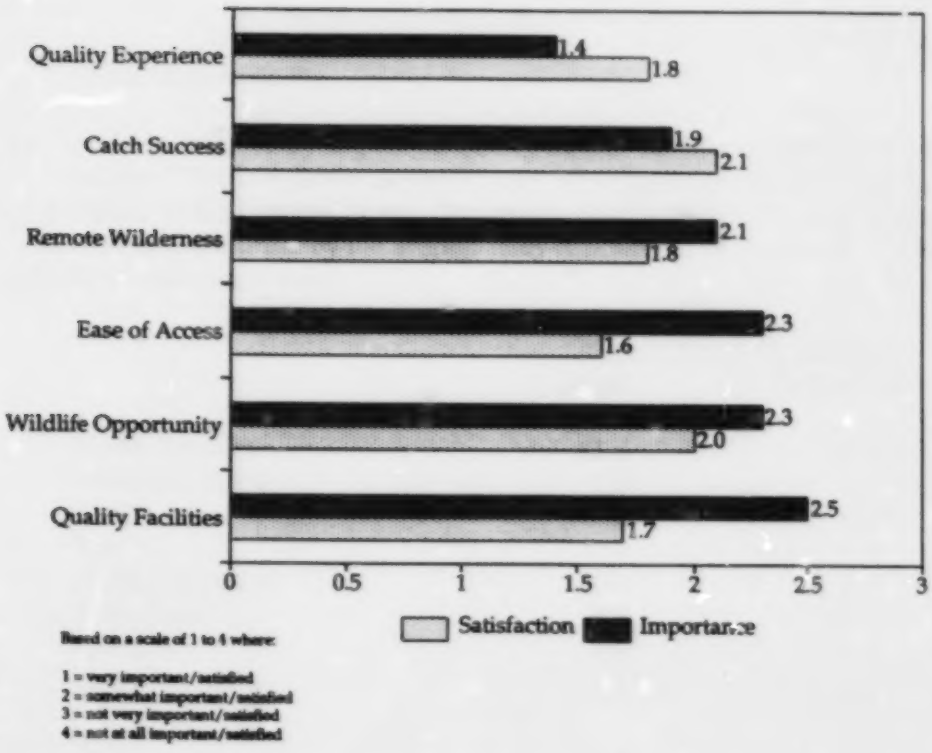
## 4.6 Important Factors When Fishing the Skeena Watershed

Anglers were asked to identify the level of importance of a series of factors when fishing the Skeena watershed area. The responses provided in Exhibit 4.5 were based on a scale ranging from 1 (very important) to 4 (not at all important). Mean responses below 2.5 indicate a high level of importance. For the guided angler the most important factors were the quality of the fishing experience and the success of catching fish. The same two factors were important to the non-guided angler.

The anglers were also asked to identify the degree to which their 1990 fishing trip met their expectations for these factors. The same 1 to 4 scale was used. Although the expectations of both guided and non-guided anglers generally were met, there is opportunity for improvement in performance of several factors or attributes of the fishing experience. For both angler segments, the importance of the two factors "Quality of the Fishing Experience" and "Success in Catching Fish" exceeded the degree to which expectations for these factors were met. Anglers in general desired better quality fishing experiences and higher angling success rates than they experienced in 1990.

Responses differentiated by guided and non-guided anglers are provided in Exhibit E.5, Annex E. Direct comments by anglers on their fishing experiences in the Skeena watershed are summarized in Annex I.

**Exhibit 4.5: Importance and Satisfaction of Skeena Fishery Attributes**



# 5.0 Economic Impacts

Expenditures by anglers make an important economic contribution to the local Skeena area economy in communities such as Terrace, Smithers, Hazelton, Houston and Burns Lake. Economic impacts arise directly from income and employment in guide operations, and from income and employment in local businesses that anglers frequent. In addition, spinoff effects occur through linkages to suppliers of goods and services and through the respending of wage income on consumer goods and services. The sum of direct industry, indirect supplier and induced spending impacts represent the total economic impact of angler expenditures.

The economic profiles of guide operations and angler activities in Section 3 and 4 respectively, and economic multiplier analysis were used to estimate the economic impacts of expenditures on sport fishing in the Skeena watershed (see Annex G).

## 5.1 Total Expenditures

Total local expenditures by anglers on fishing trips to the Skeena watershed were an estimated $12.6 million. Total in-province expenditures were an estimated $15.8 million (including the $12.6 million in local expenditures). The estimates were derived by multiplying the number of angler days of Exhibit 2.2 by the average daily expenditure of Exhibit 4.3. The breakdown by expenditure component was:

| | Expenditures ($ million) | |
|---|---|---|
| | **Local** | **In-Province** |
| Guide Services | $2.6 | $3.2 |
| Accommodation | 1.0 | 1.1 |
| Food | 2.2 | 2.6 |
| Travel | 2.4 | 3.8 |
| Fishing Supplies | 1.9 | 2.0 |
| Boat Costs | 1.8 | 2.4 |
| Licences | 0.6 | 0.6 |
| Other | 0.1 | 0.1 |
| **Total** | **12.6** | **15.8** |

Provincial expenditures were higher because non-local anglers spent money on travel, accommodation, food and other items to get to the Skeena region. Some local anglers brought boats outside the local area (e.g. in Prince George).

In-province expenditures on guide services were $0.6 million higher than the $2.6 million actually received by guides. Many European guided anglers purchased a Skeena fishing package

that included return airfare from say Frankfurt, Germany. Provincial guided angler expenditures therefore were higher than the revenue to guide operations.

The estimates excluded expenditures by saltwater anglers targeting at Skeena stocks -- an estimated $0.5 to $1.0 million in 1990.[1]

## 5.2 Expenditures Attributable to Angling

Many people take trips to the Skeena region to fish and to conduct other activities such as general touring, visiting friends and relatives, business, etc. The result is that not all of the expenditures identified in Section 5.1 can be attributed to angling in the Skeena watershed. Rather the expenditures should be prorated or allocated to the various trip activities including sport fishing. Information was collected in the angler survey as to primary trip purpose for visitors to the region (see discussion in Section 4.4).

Certain expenditure categories for visiting anglers were allocated 100% to sport fishing, namely -- guide services, fishing supplies, boat costs, licences and other. The remaining trip expenses of accommodation, food and travel were included if sport fishing was the primary trip purpose, and excluded if sport fishing was not the primary trip purpose.

Local anglers also can take trips in the Skeena watershed for several reasons, e.g. sport fishing, camping, day excursions, etc. For this study all expenditures by locals except food costs were allocated to sport fishing. Expenditures by locals on food were considered to be part of daily living expenditures. The result was that the daily expenditure by locals attributable to sport fishing was $32 from a total daily expenditure level of $39. The shares of daily expenditures attributable to sport fishing for the various angler categories are displayed in Annex G.

Aggregate sport fishing expenditures by anglers then were 80-85% of total expenditures on all activities.

| | Expenditures ($ million) | |
|---|---|---|
| | **Local** | **In-Province** |
| Total All Activities | $12.6 | $15.8 |
| Sport Fishing Activity | $10.4 | $13.5 |

It is the expenditures that were attributable to sport fishing that were used in the economic impact analysis below.

[1] 10,000 angler-days costed at $50 to $100 per day (average daily local expenditures by freshwater anglers were $66 -- Exhibit 4.3).

## 5.3 Local and Provincial Impacts

Exhibit 5.1 displays the economic impacts arising from cash expenditures on angling activities in the Skeena watershed. Three economic impact indicators were used in the analysis:

- employment -- measured in person-year equivalents;
- wages and salaries -- including supplementary benefits; and
- income or value-added -- the sum of business income and wages and salaries, sometimes called Gross Domestic Product (GDP).

**Exhibit 5.1: Economic Impacts of Sport Fishing in the Skeena River Watershed 1990[a]**

| | Local Impacts | Provincial Impacts[d] |
|---|---|---|
| ***Steelhead Angling*** | | |
| Angler Expenditures ($ million) | $2.8 | $3.7 |
| Income ($ million)[a] | $1.9 | $3.5 |
| Wages & Salaries ($ million)[b] | $1.3 | $2.4 |
| Employment (PY's)[c] | 50 | 85 |
| ***Other Angling*** | | |
| Angler Expenditures ($ million) | $7.6 | $9.8 |
| Income ($ million)[a] | $5.1 | $9.2 |
| Wages & Salaries ($ million)[b] | $3.4 | $6.3 |
| Employment (PY's)[c] | 140 | 215 |
| ***All Angling*** | | |
| Angler Expenditures ($ million) | $10.4 | $13.5 |
| Income ($ million)[a] | $7.0 | $12.7 |
| Wages & Salaries[b] | $4.7 | $8.7 |
| Employment (PY's)[c] | 190 | 300 |

a Income or value-added is the sum of wages and salaries and business income (business income or capital surplus comprises interest payments, depreciation, taxes and after-tax profit).
b Included in income.
c Person years.
d Provincial impacts include local impacts.

Source: Direct effects of guiding from guide profile (Exhibit 3.3); other effects from multiplier analysis (Annex G).

Income represents the gross return to both labour and capital, and is a valuable measure of aggregate economic activity in a region. Income is less than expenditures since businesses import goods and services from outside the region.

Impacts on the local economy from the $10.4 million in local sport fishing expenditures in 1990 were:

- 190 person-years of local employment;
- $4.7 million local wages and salaries; and
- $7.0 million in local value-added or income.

The impacts include both direct effects as well as ripple effects on supplier and consumer industries.

The economic impacts on the provincial economy were much larger for two reasons. First angler expenditures were higher at the provincial level. Secondly the provincial economy is more integrated and has much smaller import leakages than the local economy i.e., provincial "multiplier" effects are greater. Estimated impacts on the provincial economy from the $13.5 million in provincial sport fishing expenditures were:

- 300 person-years of provincial employment;
- $8.7 million in provincial wages and salaries; and
- $12.7 million of provincial value-added, income or GDP.

The share of impacts attributable to steelhead angling, as opposed to angling for salmon or freshwater species, was 27% of the total impacts. The 27% steelhead angling share was greater than the 19% steelhead angling share of angler-days (Exhibit 2.2). A greater share of steelhead anglers used guides, and each guided day contributed more to the economy than did a non-guided day.

### 5.4 Resource Tax Revenue

The provincial government collects revenue directly from anglers for the licences (basic and steelhead), chinook stamps and charges for fishing classified waters. The government also collects revenue directly from guides for licences (basic guide and assistant guides) and guide quota days on classified waters.

The revenues from both sources were estimated to be $585,000 in 1990 -- $560,000 from anglers and $25,000 from guide operators. These direct revenues were included in the value-added or income measures of Exhibit 5.1

The estimated economic impacts for 1990 may not adequately portray the recent level of economic activity from the Skeena sports fishery for several reasons -- 1990 was a poor year for steelhead; the economy was in a recession in 1990; there was some angler resistance to daily charges for classified waters introduced in 1990; and Skeena pink and sockeye salmon were not open to angling until 1991.

# 6.0 Resource and Management Concerns

The economic impacts of angling in the Skeena watershed have been demonstrated. The continuing flow of angler expenditures and impacts to the region is dependent upon a strong and healthy resource. The visitor to the area is not only interested in the fish resources, but as noted in Section 4.6, also the remote wilderness and the wilderness experience.

Strong concerns have been raised that the resources are being threatened. The 1990 article on the Skeena steelhead in Trout magazine brought the resource concerns to the attention of anglers across North America.

A key area of concern and conflict among various fishing groups and governments is the impacts that mixed stock commercial salmon fisheries have on Skeena stocks. The commercial fishery targets on abundant salmon stocks such as enhanced sockeye, and in the process weaker stocks are overharvested. Small incidental catches of non-target species can have significant impacts on wild stock conservation and numbers of fish available to anglers.

Another area of concern is habitat loss through the expansion of the logging and mining industries into sensitive areas. The practices and duration of the native in-river subsistence fishery also impact Skeena fish stocks.

The B.C. Ministry of Environment is very concerned with the Skeena sport fishery in general and with the Skeena steelhead in particular. The priority of the provincial Fisheries Program as reflected in its new strategic plan is the conservation of wild fish stocks. The Provincial Inter-Ministry Tidal Sport Fishing Steering Committee and the Federal/Provincial Recreational Fishing Coordinating Committee have identified the Skeena River situation as one of the most important fisheries management issues.

Following are perspectives of angling guides and anglers on resource management, regulations and other issues.

## 6.1 Angling Guide Perspective

***Business Constraints to Growth of the Guiding Sector***

Guides were asked to comment on the most serious constraint to the growth of their business in the guide survey. Guides focused their responses on internal business aspects, specifically the 1990 introduction of quota allocation of guided rod-days on classified waters. This was understandable as the system was new.

Many guides felt that the new government regulations were constraining their business. These regulations required the guide to complete a guide area plan at the beginning of the year and a guide area report at the end of the year. The allocation of rod days was also a concern. Some

guides felt that the allocation of rod days limited their ability to operate; others were concerned that over time they may lose their quota of rod days. On the other hand, some of the guides stated that the quota system was not a concern and that they used the positive benefits of the quota system in their marketing material. One would expect guide concerns over reporting requirements and rod-day quotas to subside somewhat as guides become more familiar with the new management system.

Issues with business operations such as limited ability to obtain financial assistance and the limitation in expansion were identified by the guides. Concern also existed that the fish stocks were declining. Some guides felt that the lack of steelhead and salmon fishing opportunities was restricting their ability to maintain repeat clientele.

Guides indicated that the commercial fishery at the mouth of the Skeena was compressing the guiding and angling season for steelhead and coho. The fish take several weeks to travel from the Skeena mouth to the upper Skeena tributaries. The commercial fishery in July and early August has caused very few fish to be available in the upper tributaries until mid September.

Some guides focused on native issues. These included the Indian Food Fishery, the need to settle land claims and the unrest in some areas due to native concerns. This unrest has disrupted some guiding operations.

***Steps to Reduce These Constraints***

The guides were asked to identify the requirements to reduce these constraints. Common suggestions included the need for less government regulations, better management of the resource and the need to limit the commercial fishery. The guides would like to see changes in the gillnet fishery at the mouth of the Skeena to reduce the interception of steelhead. In addition several guides identified the need for more cooperation and communication between MOE, DFO and the various user groups.

***Management of the Resource***

The guides were asked to comment or make suggestions regarding the management of the fishery and resource. The most common comments focused on the need to address the issue of commercial fishing at the mouth of the Skeena to reduce the incidental catch of steelhead and the need to include the sport fishery in the management of the Skeena fish resources. Another common comment was the need to improve communication between the various user groups and government.

The final question on the survey asked the guides to add any additional comments. Most of these comments centred around the guides' concerns over the resource. Several guides felt that there was good potential for growth of their industry if the fish stocks could be improved. Some felt that they are already experiencing an increase in their business and were very optimistic towards the future. On the other hand, some guides were pessimistic and felt that the new regulations and the depleting fish stocks were having negative impacts on their business.

A listing of guide comments is given in Annex H.

## 6.2 Angler Perspective

Anglers choose the Skeena watershed as a fishing destination for various reasons. The most important factors in this selection process were the quality of the fishing experience, success of catching a fish and the opportunity to see wildlife in a wilderness setting (Section 4.6).

Angler comments from the mail survey covered a diverse array of opinions touching on resource concerns, regulations and enforcement access and infrastructure, management and other areas. Some comments were clearly in conflict. For example, some anglers wanted more access and facilities. Others thought that access was too good and this had led to overcrowding. This reflects differences in angling experiences desired by different segments of the angler population.

Representative comments by anglers were:

***Resource Protection***

- protect the fish resources, especially steelhead, and the natural beauty and viewscapes of the area;
- steelhead are much too important/valuable to the sport fishery to be caught by the commercial fishery;
- there is a lot of fish wasted/injured in the Indian gaff fishery at Moricetown;
- reduce the commercial bycatch of steelhead;
- the remoteness, wildlife and natural beauty of the area are being jeopardized by logging and mining;
- you need to develop incentives for selective commercial and Indian food fisheries where steelhead can be returned unharmed to the river.

***Regulations and Enforcement***

- two salmon possession limit is restrictive for overseas visitors;
- get pink and sockeye salmon open to sport fishing to relieve pressure in other species;
- go to more restrictive fishing regulations such as catch and release, barbless hooks, lower limits;
- there is very little enforcement;
- the daily fees for classified waters will drive out-of-province anglers away;
- endorse the fees for fishing classified waters;
- need more flexible system of daily fees for classified waters so that you don't have to specify in advance exactly which days you will fish;

*Access and Crowding*

- access is too good; the area is too crowded/commercialized;
- need affordable access to fishing areas other than lodges; more boat launch access is needed;
- do not overpromote the fishery; this will ruin it for locals;

*Fishing Quality and Success Rates*

- catch success is getting worse each year;
- fishing in the Skeena area is unrivalled in North America;
- probably won't return unless fish populations increase dramatically;

*Guide Operations*

- guide operations are first rate;
- guides are inexperienced;

*Information Needs*

- need easier interpretation of angling regulations;
- increase information on fly fishing and other opportunities;

A more complete listing of angler comments is given in Annex I.

# 7.0 Conclusions

The sport fishery in the Skeena watershed provides an important economic stimulus to several regional economies. A much greater share of Skeena angler-days comprise guide activity and activity by out-of-province anglers than for the freshwater fishery in the Province as a whole. This higher "export" content suggests that much of angler expenditures is tourist spending that would not occur otherwise, and hence truly represents a net injection of income to the local and provincial economies. At the same time, the fishery provides an important recreation opportunity for local residents.

There is diversity of anglers and angler preferences. Some aspects of this diversity are:

- some anglers prefer pristine isolated settings whereas others prefer easy assess to urban amenities;
- some anglers prefer fly-fishing whereas others prefer bar fishing using lures;
- anglers target on different species (summer run wild steelhead, salmon and freshwater species such as rainbow trout);
- some anglers practice catch-and-release whereas others seek a consumptive, kill fishery; and
- some anglers seek trophy size fish exclusively whereas others seek fish of any size.

What makes the Skeena watershed unique is the diversity of species available, the large size of fish, the fly-fishing opportunities and its pristine wilderness settings.

The common underpinning to the variety of angling experiences is a strong and healthy resource. There is great potential for the sport fishery from an economic development perspective. The Skeena watershed is very productive, and its unique aspects draw anglers from around the world.

However, this potential can not be realized under the present fisheries management regime, and the dual, sometimes conflicting management responsibility vested in the federal and provincial governments. The commercial fishery at the mouth of the Skeena fishery is the major harvester of Skeena steelhead even though commercial steelhead bycatch is relatively small as a share of the number of target sockeye caught. There is a severe mixed stock management problem in the commercial fishery.

Angling is still relatively high quality but declining. This decline in success rates ultimately will result in loss of angling activity and angler expenditures to the region, if in fact this has not already occurred.

The resource and management problems in the area are pressing and escalating rapidly. The evidence is compelling that a better system of management is required. There is a need to tap the potential of the Skeena sport fishery, without at the same time, significantly reducing the substantial benefits of the commercial fishery. This is not a simple task; otherwise a solution would have been found by now. It is hoped, however, that this economic study will raise the profile of the resource issue, and help foster a new spirit of cooperation and resolve among users, resource managers and the public in searching for solutions.

The estimated economic impacts from steelhead angling were less than half of the economic impacts from all angling activity in the Skeena watershed. However, these measures do not adequately reflect the importance of the steelhead fishery and resource. The Skeena steelhead is important because:

- the wild steelhead runs and habitat in the Skeena watershed are unique and have a high preservation value to present and future generations;
- 4 of the 5 Class I waters in the province are in the Skeena watershed, and angling in these waters is primarily directed at steelhead;
- the watershed draws more than 50% of total out-of-province steelhead angling, i.e., the steelhead fishery has a large "export" content;
- it provides substantial value or satisfaction to the angler over and above the amount s/he pays to go fishing (see discussion in Annex B).

The importance of the steelhead and the urgency of its management problems surpass its contribution to regional income and employment, as these measures only portray part of the story.

# ANNEX A

# SURVEY QUESTIONNAIRES

# Skeena River Guide Survey

**The British Columbia Ministry of Tourism in Association with the Ministry of Environment has commissioned a study of the economic impacts of the sports fishery in the Skeena River watershed. The purpose of this survey is to document the operations and economic importance of the guiding component of the fishery.**

***Survey results will be kept strictly confidential and only industry aggregate information will be reported. The final report which presents the results of the survey will be forwarded to you. If you have any questions feel free to phone us collect (number at bottom of page 2).***

**We will phone within two weeks to go through the survey with you. Alternately, you can forward the completed questionnaire in the attached envelope. The term "local" refers to the Pr. Rupert, Terrace, Smithers, Houston and Hazelton area.**

## A. YOUR OPERATION

1. How many years have you been in business? _____ years

2. What is your home base during the season? (Name the community)

   _____

   What is your permanent/winter residence? (Name the community or city)

   _____

## B. GUIDING ACTIVITY

3. What species do you guide for? (Check all that apply)

   - ❑ Steelhead
   - ❑ Chinook
   - ❑ Coho
   - ❑ Lake trout
   - ❑ Rainbow trout
   - ❑ Other (specify) _____

4. During which months did you guide in 1990? (Check all that apply)

   - ❑ Jan
   - ❑ Feb
   - ❑ Mar
   - ❑ Apr
   - ❑ May
   - ❑ June
   - ❑ July
   - ❑ Aug
   - ❑ Sept
   - ❑ Oct
   - ❑ Nov
   - ❑ Dec

5. What is included in your daily rate? (Check all that apply)

   - ❑ Accommodation
   - ❑ Meals/food
   - ❑ Rod & gear
   - ❑ Transportation to river/lake
   - ❑ Transportation to base (Terrace or Smithers)
   - ❑ Other (specify)_____

6. What waters did you guide in 1990, what were the numbers of anglers and angler days guided, and what was the main target species of these angler days? (eg. 2 anglers for 4 days = 8 angler days )

| Name of River, Stream or Lake | No. Days by Main Target Species: Steelhead A | + Chinook & Other B | = Total No. of Angler Days | No. of Anglers | Average Daily Rate |
|---|---|---|---|---|---|
| 1 _____ | | | | | $ |
| 2 _____ | | | | | $ |
| 3 _____ | | | | | $ |
| 4 _____ | | | | | $ |
| 5 _____ | | | | | $ |
| 6 _____ | | | | | $ |
| 7 _____ | | | | | $ |
| 8 _____ | | | | | $ |

7. On each of the waters on which you guide what do you judge is the approximate mix between guided and non-guided anglers?

| Name of River, Stream or Lake | Share of Anglers: Guided | + Non-Guided | = Total |
|---|---|---|---|
| 1 _____ | _____ % | + _____ % | = 100% |
| 2 _____ | _____ % | + _____ % | = 100% |
| 3 _____ | _____ % | + _____ % | = 100% |
| 4 _____ | _____ % | + _____ % | = 100% |
| 5 _____ | _____ % | + _____ % | = 100% |
| 6 _____ | _____ % | + _____ % | = 100% |
| 7 _____ | _____ % | + _____ % | = 100% |
| 8 _____ | _____ % | + _____ % | = 100% |

8. Guided anglers can spend more than the package cost on their fishing trip (e.g. gifts, airfare, hotels, etc., not covered in the package). Can you estimate how many additional $'s each angler spends locally as part of their fishing trip?

| | $'s Spent Locally / angler trip (exclude package costs) |
|---|---|
| BC Anglers | $ _____ Cdn |
| Non-BC Anglers | $ _____ Cdn |

9. Where do your clients live?

   _____ % Local residents
   _____ % Rest of BC
   _____ % Other Canadians
   _____ % Non-Canadians
   **100%**

10. How many people did your operation employ in 1990?

| | Number | Days Worked |
|---|---|---|
| Guide (Yourself) | 1 | |
| Assistant Guides | | |
| Other Employees | | |
| **Total** | | |

## D. Investment and Expenditures

11. What capital expenditures are associated with your guiding business?

| | Total Capital Investment to Date* | 1990 Capital Expenditures | % Share 1990 Expenditures Made Locally |
|---|---|---|---|
| Land or Land Lease | $ | $ | % |
| Boats | $ | $ | % |
| Vehicles | $ | $ | % |
| Buildings & Equipment | $ | $ | % |
| Other (e.g. aircraft) | $ | $ | % |
| **Total** | $ | $ | % |

*original or purchase cost in as spent dollars, including 1990 expenditures.

12. What operating expenditures on goods and services related to your guiding business did you make in 1990?

| | Expenditures | % Share of Expenditures Made Locally |
|---|---|---|
| Wages & Salary Costs (including benefits and payments to yourself) | $ | % |
| Cost of Goods for Retail (e.g. food, liquor, gasoline, etc.) | $ | % |
| Repairs & Maintenance | $ | % |
| Food & Accommodation | $ | % |
| Air Charter | $ | % |
| Other Transportation (including fuel) | $ | % |
| Marketing/Promotion /Travel | $ | % |
| Administration/ Office | $ | % |
| Insurance[a] | $ | % |
| Other[b] | $ | % |
| **Total Expenditures** | $ | % |

a) Exclude property taxes, permits, licenses

b) Exclude interest payments, principal payments, depreciation and taxes.

14. Do wages and salary costs include payment to yourself?

☐ Yes ☐ No

15. What were your total gross revenues from sport fishing guiding (Canadian $) in 1990?

$ _____ Cdn

What were your total gross revenues from guiding (Canadian $) in:

$ _____ in 1989 (Cdn)

$ _____ in 1988 (Cdn)

16. Do you offer other activities besides guided sport fishing trips?

☐ No

☐ Yes What are they? _____

_____

## E. THE FUTURE

17. What do you view to be the most serious constraint to the growth and expansion of your guiding business?

_____

_____

_____

_____

18. What is required to reduce these constraints?

_____

_____

_____

_____

19. Do you have any comments or suggestions regarding managment of the fishery resource?

_____

_____

_____

_____

20. Do you have any additional comments?

_____

_____

_____

_____

_____

_____

_____

_____

_____

**Thank you**

**For Information Contact:**
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# Skeena River Sport Fishery

***The Province of British Columbia is conducting a study of the Skeena River Sport Fishery. One of the primary goals of this study is to determine the fishing effort and to estimate the economic contributions of the angler. It is our understanding that you purchased a B.C. Freshwater sport fishing license in the Smithers/Terrace area. Could you please answer the following questions as they pertain to your fishing activity in the Skeena River watershed. All replies will be kept strictly confidential.***

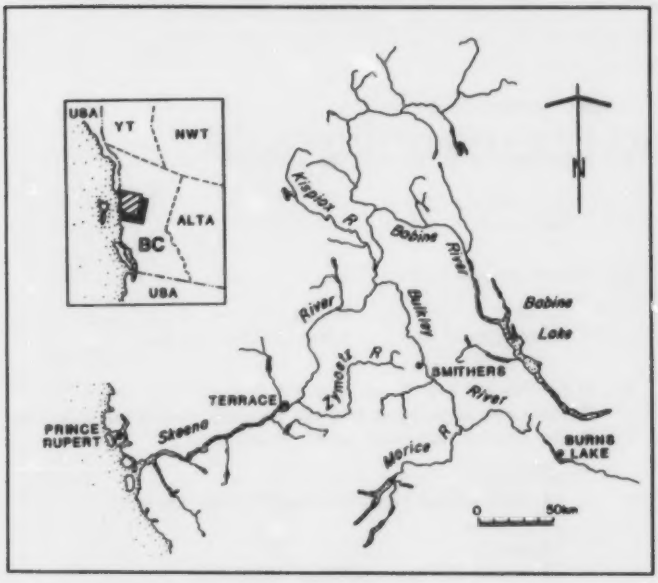
---

**1. In 1990 did you fish in British Columbia**

❑ Yes
❑ No ⟶ *Go to Question 15*

**Did you fish within the Skeena watershed? (see map below)**

❑ Yes
❑ No ⟶ *Go to Question 15*




**Angling Activity in Skeena Watershed**

**2. How many days did you fish in the Skeena watershed area in 1990?** _____ **days**

**3. Which rivers, streams or lakes did you fish in the Skeena watershed area in 1990? How many days did you fish on each?**

| | | | |
|---|---|---|---|
| Skeena mainstem | ❑ No | ❑ Yes | _____days |
| Morice R. | ❑ No | ❑ Yes | _____days |
| Kispiox R. | ❑ No | ❑ Yes | _____days |
| Sustat R. | ❑ No | ❑ Yes | _____days |
| Copper/ Zymoetz R. | ❑ No | ❑ Yes | _____days |
| Bulkley R. | ❑ No | ❑ Yes | _____days |
| Babine R. | ❑ No | ❑ Yes | _____days |
| Babine Lake | ❑ No | ❑ Yes | _____days |
| Freshwater Lakes | ❑ No | ❑ Yes | _____days |
| Other Rivers (specify) | | | |
| _____ | ❑ No | ❑ Yes | _____days |
| _____ | ❑ No | ❑ Yes | _____days |

**4. Of your total days fished in the area, how many days did you fish for?**

_____ days for steelhead
_____ days for chinook or coho
_____ days for other species (specify) _____

**5. Did you buy a chinook stamp for fishing the Skeena watershed?**

❑ Yes ❑ No

**6. Did you buy a steelhead licence for fishing the Skeena watershed?**

❑ Yes ❑ No

**7. Did you employ a paid guide while fishing the Skeena watershed in 1990?**

❑ Yes ⟶ For how many days? _____
❑ No

**8. Was 1990 the first year that you fished in the area?**

❑ Yes
❑ No. **How many years have you been fishing the Skeena watershed area?** _____ Years

**9. Do you plan to return to the Skeena watershed area to go fishing?**

❑ Yes ❑ No

**If Yes, when do you think that will be?**

❑ 1991
❑ within the next two years
❑ within the next three years
❑ within the next five years

**If not, why not?**

_____
_____
_____

**10. Were you a non-paying guest on a fishing trip to the Skeena watershed area in 1990 (for example, your costs were covered by a company, a friend, etc.)**

❑ Yes
❑ No ⟶ *Go to Question 11*

**How much do you estimate the cost would have been if you had personally paid for the trip?**

$ _____

**11. In 1990, how much did you personally spend on yourself to fish in the Skeena watershed area?**

| | $ Spent on Yourself to Fish | % Breakdown of Expenditures by Area | | | |
|---|---|---|---|---|---|
| | | Skeena Local Area | Rest of BC | Outside BC | Total |
| Guiding Services/Packages | $ | % | % | % | = 100% |
| Accommodation* | $ | % | % | % | = 100% |
| Food & Beverage* | $ | % | % | % | = 100% |
| Travel Costs* | $ | % | % | % | = 100% |
| Fishing Supplies | $ | % | % | % | = 100% |
| Boat costs/ rentals* | $ | % | % | % | = 100% |
| Fishing licence fees* | $ | % | % | % | = 100% |
| Other _____ | $ | % | % | % | = 100% |
| **Total** | $ | | | | |

* *Enter zero if included in package.*

**Are these expenditures in**

❑ Canadian dollars or ❑ US dollars

**12. How important are the following factors when you fish the Skeena watershed area?**

*Enter (1,2,3,4 or 5) for each factor based on the scale below.*

1 very important
2 somewhat important
3 not very important
4 not at all important
5 no opinion

❑ ease of access to the fishing sites
❑ remote wilderness
❑ quality of fishing experience
❑ success of catching fish
❑ opportunity to see wildlife
❑ quality of the facilities

**13. To what extent did your 1990 fishing experience in the Skeena watershed area meet your expectations for each of the following factors?**

*Enter (1,2,3,4 or 5) for each factor based on the scale below.*

1 very satisfied
2 somewhat satisfied
3 not very satisfied
4 not at all satisfied
5 no opinion

❑ ease of access to the fishing sites
❑ remote wilderness
❑ quality of fishing experience
❑ success of catching fish
❑ opportunity to see wildlife
❑ quality of the facilities

**14. What changes would have made your fishing experience in the Skeena watershed area more enjoyable?**

_____

_____

_____

_____

_____

## Angler Information

**15. What type of license did you purchase?**

❑ 6 day
❑ annual

**16. Where do you live?**

❑ BC Which community? _____
❑ Outside of BC Which province or State? _____

**17. If you do not live in the local Pr. Rupert- Terrace- Smithers- Burns Lake area, what was the primary reason for travelling to the Skeena watershed area? (check one)**

❑ fishing
❑ other outdoor recreation (e.g. hunting, canoeing)
❑ business
❑ touring
❑ passing through to another destination
❑ visiting friends & relatives
❑ Other (specify_____)

**18. What is your age?**

❑ 19-24 ❑ 45-54
❑ 25-34 ❑ 55-64
❑ 35-44 ❑ 65+

**19. Please write any further comments you may have on the Skeena watershed sport fishery?**

_____

_____

_____

_____

_____

_____

**Please return this questionnaire in the self addressed stamped envelope.**

**Thank You Again**

# ANNEX B

# ECONOMIC IMPACTS VERSUS ECONOMIC VALUES

## ANNEX B - ECONOMIC IMPACTS VERSUS ECONOMIC VALUES

The economic impacts of sport fishing in the Skeena watershed represent the economic activity generated by cash expenditures by anglers in the region. An initial angler expenditure is associated with income and employment to guide operations and to local suppliers of angling goods and services (e.g., sporting good stores, gas stations etc.) These suppliers in turn can purchase goods and services from second stage local suppliers and generate a further round of impacts. In addition the local spending of wage income generates impacts in the consumer goods and service industries. The total economic impact of angling is the sum of direct industry, indirect supplier and induced consumer spending impacts.

In contrast, the net economic value of sport fishing is the gross benefits of the fishing activity less full economic costs. The gross economic value or benefit of any good or service is measured by the amount of money people are willing to exchange for it. Economic costs represent the opportunity costs of material and service inputs, labour, capital and raw resources in their next best alternative use. Opportunity, and hence economic costs, reflect the concept that using resources for one purpose precludes their use to generate benefits in alternate uses.

Sport fishing is a form of recreation, or more specifically, outdoor recreation. As such, the sport fishing product is the recreational experience the quantity of which is measured by the number of angler-days. The quality of the sport fishing experience is affected by weather, scenery, congestion, and camaraderie with fellow fishermen, as well as fishing success rates. The amount of fish caught, on its own, is not the appropriate measure of sport fishing output.

Since the measure of output is the experience, the value of sport fishing is derived from the experience. The value cannot be measured by the value of fish caught, as in the commercial fishery, or by the expenditures on equipment, supplies and services incurred by anglers.

The value of sport fishing in terms comparable to other goods and services in society is properly measured by the amount of money anglers are willing to pay to go fishing. The federal and provincial governments have adopted a policy of nominal pricing of fishing opportunities so that the actual amount anglers pay in licence fees does not reflect the value of angling. Nevertheless, the amount anglers would be willing to pay is still the correct measure of value.

Sport fishing expenditures are a cost of fishing, and, accordingly, do not represent the value or benefit of sport fishing. This explains why sport fishermen are willing to spend much more on gear, transportation and other goods and services than the cost of purchasing the equivalent weight of fish in the retail market. It also explains why anglers can enjoy a fishing experience even though they did not catch any fish or did not eat the fish they did catch.

It is the excess of benefit, as measured by willingness to pay, over and above all economic costs that constitute the net economic value of sport fishing activity. This means that the economic value of the fishing experience is the amount of money anglers are willing to pay over and above

their actual costs (i.e. the measure of net benefit or satisfaction accruing to the angler-consumer). This benefit may be large due to the nominal costs (low licence fees) for access to Skeena River watershed fish resources. The majority of the benefits from angling accrue to the anglers rather than the resource owners.

Economic impacts are generally considered to be gross impacts in the sense that no corrections are included for the possibility that expenditures would have been made in the absence of the fishing activity, and for the alternative uses of the capital and labour in the economy. Some small part of the estimated economic impacts may represent net economic benefits, depending on the level of unemployment in the economy and the need for the expenditure that leads rise to the impact. As a general rule, however, impacts should be considered separately from economic values.

Economic benefit or value analysis is important in assessing the economic contribution of the fishery to the size of the economy, and hence is the most useful economic criteria in resource allocation decisions. Economic impact (income and employment) measures are useful in indicating potential impacts in specific supplier industries and in specific regions.

# ANNEX C

# GUIDE REPORT DATA

**Exhibit C1: Guided Angler-Days in the Skeena River Watershed, 1990**

| Waterbody | Guided Days by Target Species | | | |
|---|---|---|---|---|
| | Steelhead | Salmon | Other | Total |
| Babine Lake | 0 | 0 | 44 | 44 |
| Babine River 1 | 1,728 | 26 | 31 | 1,785 |
| Babine River 2 | 3 | 18 | 850 | 871 |
| Bulkley Lake | 0 | 0 | 2 | 2 |
| Bulkley River | 1,024 | 32 | 11 | 1,067 |
| Collins Lake | 0 | 0 | 2 | 2 |
| Ecstall River | 0 | 102 | 0 | 102 |
| Exchamsiks River | 0 | 18 | 0 | 18 |
| Fish Pan Lake | 0 | 0 | 28 | 28 |
| Gitnadoix River | 0 | 132 | 0 | 132 |
| Kasiks River | 22 | 46 | 0 | 68 |
| Khtada River | 0 | 0 | 4 | 4 |
| Khyex River | 7 | 0 | 0 | 7 |
| Kidprice Lake | 0 | 0 | 4 | 4 |
| Kispiox River | 217 | 34 | 28 | 279 |
| Kitsumkalum River | 154 | 585 | 0 | 739 |
| Kluatantan River | 3 | 5 | 0 | 8 |
| McBride Lake | 0 | 0 | 7 | 7 |
| Morchuea Lake | 0 | 0 | 5 | 5 |
| Morice Lake | 0 | 0 | 12 | 12 |
| Morice River | 389 | 1 | 0 | 390 |
| Morrison River | 0 | 0 | 16 | 16 |
| Morrison Lake | 0 | 0 | 40 | 40 |
| Pine Lake | 0 | 0 | 2 | 2 |
| Skeena River 1 | 51 | 269 | 0 | 320 |
| Skeena River 2 | 1,632 | 2,622 | 7 | 4,261 |
| Skeena River 3 | 22 | 608 | 0 | 630 |
| Skeena River 4 | 89 | 156 | 17 | 262 |
| Slamgeesh Lake | 0 | 4 | 0 | 4 |
| Sustut River | 402 | 72 | 12 | 486 |
| Swan Lake | 0 | 0 | 147 | 147 |
| Taltapin Lake | 0 | 0 | 5 | 5 |
| Zymagotitz River | 3 | 0 | 0 | 3 |
| Zymoetz River 1 | 194 | 2 | 1 | 197 |
| Zymoetz River 2 | 54 | 7 | 4 | 65 |
| TOTAL | 5,994 | 4,739 | 1,279 | 12,012 |

Source: MOE year-end guide reports

# ANNEX D

# STEELHEAD SURVEY DATA

**Exhibit D1: Estimated Steelhead Angler-Days in the Skeena River Watershed.[a]**

| Waterbody | Angler-Days | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
| Babine River | 2,080 | 2,483 | 3,330 | 3,172 | 3,439 | 2,503 | 2,989 |
| Bear River | 0 | 0 | 0 | 0 | 2 | 6 | 0 |
| Bulkley River | 9,801 | 10,336 | 15,651 | 9,798 | 10,696 | 7,977 | 8,705 |
| Bulkley/Morice Rivers | 303 | 315 | 281 | 571 | 344 | 297 | 94 |
| Cedar Creek | 30 | 20 | 72 | 35 | 5 | 35 | 19 |
| Ecstall River | 37 | 7 | 17 | 0 | 13 | 0 | 0 |
| Exchamsiks River | 34 | 13 | 47 | 40 | 16 | 222 | 32 |
| Exstew River | 10 | 0 | 93 | 15 | 8 | 14 | 11 |
| Gitnadoix River | 7 | 59 | 49 | 118 | 91 | 257 | 51 |
| Kasiks River | 74 | 0 | 35 | 50 | 89 | 88 | 23 |
| Khyex River | 45 | 7 | 21 | 4 | 12 | 8 | 75 |
| Kispiox River | 2,121 | 2,702 | 3,412 | 3,979 | 4,979 | 3,994 | 2,752 |
| Kitseguecla River | 172 | 49 | 32 | 53 | 0 | 9 | 15 |
| Kitsumkalum River | 4,827 | 4,405 | 4,629 | 4,656 | 3,344 | 4,585 | 3,784 |
| Kitwanga River | 70 | 63 | 17 | 135 | 68 | 16 | 15 |
| Kleanza Creek | 3 | 0 | 45 | 6 | 0 | 4 | 0 |
| Kwantantan River | 19 | 30 | 75 | 4 | 0 | 0 | 0 |
| Lakelse River | 2,993 | 3,001 | 3,326 | 3,551 | 3,240 | 4,691 | 2,570 |
| Morice River | 4,558 | 4,276 | 7,202 | 3,799 | 4,129 | 3,137 | 2,929 |
| Nanika River | 90 | 0 | 21 | 8 | 0 | 0 | 0 |
| Skeena River | 12,644 | 15,058 | 21,036 | 17,130 | 18,228 | 15,242 | 10,240 |
| Suskwa River | 89 | 219 | 227 | 201 | 181 | 258 | 65 |
| Sustut River | 682 | 623 | 801 | 831 | 857 | 649 | 659 |
| Telkwa | 122 | 86 | 226 | 97 | 57 | 69 | 160 |
| Zymagotitz River | 23 | 185 | 33 | 42 | 12 | 46 | 57 |
| Zymoetz River | 2,382 | 3,899 | 5,471 | 3,000 | 3,152 | 1,780 | 1,665 |
| TOTAL | 43,216 | 47,838 | 66,149 | 51,295 | 52,962 | 45,887 | 36,910 |

a. Both guided and non-guided
b. Estimate

Source: MOE survey of Steelhead license holders.

**Exhibit D2: Estimated Steelhead Angler-Days in the Skeena River Watershed 1990**

| Waterbody | Angler Origin | | | | |
|---|---|---|---|---|---|
| | Skeena Region | Other BC | Non-Resident Canadian | Non-Canadian | Total |
| Babine River | 799 | 572 | 120 | 1498 | 2989 |
| Bear River | 0 | 0 | 0 | 0 | 0 |
| Bulkley River | 4635 | 1742 | 565 | 1763 | 8705 |
| Bulkley/Morice River | 94 | 0 | 0 | 0 | 94 |
| Cedar Creek | 19 | 0 | 0 | 0 | 19 |
| Ecstall River | 0 | 0 | 0 | 0 | 0 |
| Exchamsiks River | 11 | 21 | 0 | 0 | 32 |
| Exstew River | 0 | 11 | 0 | 0 | 11 |
| Gitnadoix River | 23 | 26 | 2 | 0 | 51 |
| Kasiks River | 15 | 8 | 0 | 0 | 23 |
| Khyex River | 71 | 0 | 0 | 4 | 75 |
| Kispiox River | 908 | 400 | 109 | 1335 | 2752 |
| Kitseguecla River | 15 | 0 | 0 | 0 | 15 |
| Kitsumkalum River | 3064 | 609 | 47 | 64 | 3784 |
| Kitwanga River | 8 | 0 | 0 | 7 | 15 |
| Kleanza Creek | 0 | 0 | 0 | 0 | 0 |
| Kluatantan River | 0 | 0 | 0 | 0 | 0 |
| Lakelse River | 1894 | 479 | 124 | 73 | 2570 |
| Morice River | 1463 | 626 | 81 | 759 | 2929 |
| Nanika River | 0 | 0 | 0 | 0 | 0 |
| Skeena River | 6567 | 2098 | 606 | 969 | 10240 |
| Suskwa River | 49 | 12 | 0 | 4 | 65 |
| Sustut River | 26 | 172 | 26 | 435 | 659 |
| Telkwa River | 135 | 18 | 0 | 7 | 160 |
| Zymagotitz River | 53 | 0 | 4 | 0 | 57 |
| Zymoetz River | 1046 | 157 | 124 | 338 | 1665 |
| TOTAL | 20895 | 6951 | 1808 | 7256 | 36910 |

Source: MOE survey of steelhead license holders.

**Exhibit D3: Estimated Steelhead Anglers in the Skeena River Watershed 1990**

| Waterbody | Angler Origin | | | | |
|---|---|---|---|---|---|
| | Skeena Region | Other BC | Non-Resident Canadian | Non-Canadian | Total |
| Babine River | 79 | 148 | 28 | 263 | 518 |
| Bear River | 0 | 0 | 0 | 0 | 0 |
| Bulkley River | 574 | 450 | 105 | 309 | 1438 |
| Bulkley/Morice River | 4 | 0 | 0 | 0 | 4 |
| Cedar Creek | 11 | 0 | 0 | 0 | 11 |
| Ecstall River | 0 | 0 | 0 | 0 | 0 |
| Exchamsiks River | 4 | 11 | 0 | 0 | 15 |
| Exstew River | 0 | 4 | 0 | 0 | 4 |
| Gitnadoix River | 11 | 4 | 2 | 0 | 17 |
| Kasiks River | 8 | 4 | 0 | 0 | 12 |
| Khyex River | 15 | 0 | 0 | 2 | 17 |
| Kispiox River | 203 | 122 | 32 | 232 | 589 |
| Kitseguecla River | 11 | 0 | 0 | 0 | 11 |
| Kitsumkalum River | 439 | 137 | 11 | 9 | 596 |
| Kitwanga River | 4 | 0 | 0 | 2 | 6 |
| Kleanza Creek | 0 | 0 | 0 | 0 | 0 |
| Kluatantan River | 0 | 0 | 0 | 0 | 0 |
| Lakelse River | 296 | 125 | 32 | 13 | 466 |
| Morice River | 221 | 193 | 19 | 141 | 574 |
| Nanika River | 0 | 0 | 0 | 0 | 0 |
| Skeena River | 814 | 423 | 118 | 139 | 1494 |
| Suskwa River | 23 | 8 | 0 | 2 | 33 |
| Sustut River | 19 | 51 | 9 | 73 | 152 |
| Telkwa River | 15 | 11 | 0 | 4 | 30 |
| Zymagotitz River | 15 | 0 | 2 | 0 | 17 |
| Zymoetz River | 259 | 85 | 30 | 73 | 447 |
| TOTAL | 3025 | 1776 | 388 | 1262 | 6451 |

Source: MOE survey of steelhead license holders.

# ANNEX E

# ANGLER SURVEY DATA

**Exhibit E.1: Frequency of Purchasing Steelhead Licences and Chinook Stamps, Skeena River Watershed Anglers 1990**

| | Sample Size | Bought Steelhead Licence? | | Proportion Yes |
|---|---|---|---|---|
| | | Yes | No | |
| ***Guided Anglers*** | | | | |
| Canadian Resident | 6 [1] | 2 | 4 | |
| Non-Canadian | 31 | 22 | 9 | |
| All | 37 | 24 | 13 | 65% |
| ***Non-Guided Anglers*** | | | | |
| Local Resident | 67 | 33 | 34 | 49% |
| Other B.C. Resident | 36 | 9 | 27 | 25% |
| Canadian Resident | 22 | 5 | 17 | 23% |
| Non-Canadian | 31 | 8 | 23 | 26% |
| All | 156 | 55 | 101 | 35% |

| | Sample Size | Bought Chinook Stamp? | | Proportion Yes |
|---|---|---|---|---|
| | | Yes | No | |
| ***Guided Anglers*** | | | | |
| Canadian Resident | 6 [1] | 5 | 1 | |
| Non-Canadian | 31 | 10 | 21 | |
| All | 37 | 15 | 22 | 41% |
| ***Non-Guided Anglers*** | | | | |
| Local Resident | 67 | 47 | 20 | 70% |
| Other B.C. Resident | 35 | 18 | 17 | 51% |
| Canadian Resident | 18 | 13 | 5 | 72% |
| Non-Canadian | 30 | 13 | 17 | 43% |
| All | 150 | 91 | 59 | 61% |

[1] Includes 1 local resident, 2 other B.C. residents and 3 Canadians.

Source: Survey of anglers.

## Exhibit E.2: Annual Expenditures by Anglers Fishing the Skeena Watershed Area 1990

| Item | Guided Local | Non-Guided Local | Guided BC Res. | Non-Guided BC Res. | Guided Cdn.Res. | Non-Guided Cdn. Res. | Guided Non-Res. | Non-Guided Non-Res. |
|---|---|---|---|---|---|---|---|---|
| **$ Spent Locally by Angler Type** | | | | | | | | |
| Guide Services | 400 | 0 | 300 | 0 | 567 | 0 | 1,610 | 0 |
| Accommodation | 0 | 21 | 75 | 63 | 71 | 110 | 78 | 108 |
| Food | 27 | 125 | 56 | 115 | 52 | 154 | 86 | 200 |
| Travel Costs | 27 | 124 | 193 | 113 | 109 | 168 | 86 | 304 |
| Fishing Supplies | 27 | 167 | 25 | 46 | 0 | 97 | 61 | 64 |
| Boat Costs | 0 | 227 | 0 | 19 | 0 | 36 | 0 | 49 |
| Licences | 20 | 23 | 22 | 27 | 28 | 37 | 69 | 73 |
| Other | 0 | 3 | 0 | 4 | 0 | 5 | 25 | 14 |
| **Total** | **501** | **690** | **671** | **387** | **827** | **607** | **2,015** | **812** |
| **$ Spent Provincially (including $ spent locally) by Angler Type** | | | | | | | | |
| Guide Services | 400 | 0 | 300 | 0 | 675 | 0 | 1,960 | 0 |
| Accommodation | 0 | 23 | 150 | 71 | 102 | 112 | 147 | 135 |
| Food | 27 | 133 | 75 | 139 | 76 | 172 | 141 | 248 |
| Travel Costs | 27 | 130 | 350 | 193 | 195 | 266 | 282 | 535 |
| Fishing Supplies | 27 | 173 | 50 | 73 | 0 | 97 | 61 | 75 |
| Boat Costs | 0 | 302 | 0 | 23 | 0 | 36 | 0 | 55 |
| Licences | 20 | 23 | 22 | 27 | 28 | 37 | 69 | 73 |
| Other | 0 | 3 | 0 | 4 | 0 | 5 | 25 | 17 |
| **Total** | **501** | **787** | **947** | **530** | **1,076** | **725** | **2,685** | **1,138** |
| **$ Spent by Angler Type** | | | | | | | | |
| Guide Services | 400 | 0 | 300 | 0 | 759 | 0 | 2,534 | 0 |
| Accommodation | 0 | 23 | 150 | 71 | 102 | 122 | 149 | 137 |
| Food | 200 | 133 | 75 | 139 | 80 | 173 | 145 | 257 |
| Travel Costs | 200 | 130 | 350 | 193 | 233 | 303 | 741 | 638 |
| Fishing Supplies | 0 | 179 | 50 | 73 | 0 | 99 | 92 | 79 |
| Boat Costs | 0 | 302 | 0 | 23 | 0 | 36 | 0 | 63 |
| Licences | 20 | 23 | 22 | 27 | 28 | 37 | 69 | 73 |
| Other | 0 | 3 | 0 | 4 | 0 | 16 | 28 | 18 |
| **Total** | **501** | **793** | **947** | **530** | **1,202** | **786** | **3,758** | **1,265** |

Source: Survey of anglers.

## Exhibit E.3: Daily Expenditures by Anglers Fishing in the Skeena Watershed Area 1990

| Type of Angler/ Residence | $ Per Angler-Day Spent Locally | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Guide Services | Acc | Food | Travel | Fishing Supplies | Boat Costs | Licences | Other | Total |
| *Local Area Expenditures* | | | | | | | | | |
| **Guided** | | | | | | | | | |
| Local Residents | $100 | $ 0 | $ 7 | $ 7 | $ 6 | $ 0 | $ 5 | $ 0 | $125 |
| Other B.C. | 100 | 25 | 19 | 64 | 8 | 0 | 7 | 0 | 223 |
| Canadian | 210 | 26 | 19 | 41 | 0 | 0 | 10 | 0 | 306 |
| Non-Canadian | 230 | 11 | 12 | 12 | 9 | 0 | 10 | 4 | 288 |
| **Non-Guided** | | | | | | | | | |
| Local Residents | $ 0 | $ 1 | $ 7 | $ 7 | $10 | $13 | $ 1 | $ 0 | $ 39 |
| Other B.C. | 0 | 10 | 18 | 18 | 7 | 3 | 4 | 1 | 61 |
| Canadian | 0 | 20 | 28 | 30 | 18 | 6 | 7 | 1 | 110 |
| Non-Canadian | 0 | 11 | 21 | 32 | 7 | 5 | 8 | 1 | 85 |

| | $ Per Angler-Day Spent Provincially | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Guide Services | Acc | Food | Travel | Fishing Supplies | Boat Costs | Licences | Other | Total |
| *Provincial Expenditures* | | | | | | | | | |
| **Guided** | | | | | | | | | |
| Local Residents | $100 | $ 0 | $ 7 | $ 7 | $ 6 | $ 0 | $ 5 | $ 0 | $125 |
| Other B.C. | 100 | 50 | 25 | 117 | 17 | 0 | 7 | 0 | 316 |
| Canadian | 250 | 39 | 28 | 72 | 0 | 0 | 10 | 0 | 399 |
| Non-Canadian | 280 | 21 | 20 | 40 | 9 | 0 | 10 | 4 | 384 |
| **Non-Guided** | | | | | | | | | |
| Local Residents | $ 0 | $ 1 | $ 8 | $ 8 | $10 | $17 | $ 1 | $ 0 | $ 45 |
| Other B.C. | 0 | 11 | 22 | 30 | 11 | 4 | 4 | 1 | 83 |
| Canadian | 0 | 20 | 31 | 48 | 18 | 7 | 7 | 1 | 132 |
| Non-Canadian | 0 | 14 | 26 | 55 | 8 | 6 | 8 | 2 | 119 |

Source: Survey of anglers (annual expenditures divided by local days fished).

## Exhibit E.4: Primary Reason for Visiting Skeena Watershed Area

| | Number of Responses | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Fishing | Other Recreation | Business | Touring | Pass Through | Visiting Friends | Other | All |
| ***Guided Anglers*** | | | | | | | | |
| Local Resident | NA | NA | NA | NA | NA | NA | NA | NA |
| Other B.C. Resident | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 |
| Canadian Resident | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Non-Canadian | 28 | 0 | 0 | 1 | 1 | 1 | 0 | 31 |
| All | 31 | 0 | 1 | 1 | 1 | 2 | 0 | 36 |
| ***Non-Guided Anglers*** | | | | | | | | |
| Local Resident | NA | NA | NA | NA | NA | NA | NA | NA |
| Other B.C. Resident | 10 | 3 | 6 | 5 | 1 | 11 | 0 | 36 |
| Canadian Resident | 17 | 0 | 0 | 2 | 0 | 3 | 0 | 22 |
| Non-Canadian | 18 | 0 | 0 | 2 | 2 | 7 | 2 | 31 |
| All | 45 | 3 | 6 | 9 | 3 | 21 | 2 | 89 |

Source: Survey of anglers.

**Exhibit E.5: Important Factors in Fishing the Skeena Watershed and Satisfaction**

| | Mean Response[a] | | |
|---|---|---|---|
| | Guided | Non-Guided | All Respondents[a] |
| ***Importance of Factor*** | | | |
| Quality of Fishing Experience | 1.2 | 1.5 | 1.4 |
| Success of Catching Fish | 1.9 | 1.9 | 1.9 |
| Remote Wilderness | 1.7 | 2.2 | 2.1 |
| Ease of Access to Fishing Site | 2.3 | 2.2 | 2.3 |
| Opportunity to See Wildlife | 2.0 | 2.3 | 2.3 |
| Quality of the Facilities | 1.8 | 2.6 | 2.5 |
| ***Satisfaction with Factor*** | | | |
| Quality of Fishing Experience | 1.9 | 1.7 | 1.8 |
| Success of Catching Fish | 1.9 | 2.1 | 2.1 |
| Remote Wilderness | 1.6 | 1.8 | 1.8 |
| Ease of Access to the Fishing Site | 1.4 | 1.6 | 1.6 |
| Opportunity to See Wildlife | 1.9 | 2.0 | 2.0 |
| Quality of the Facilities | 1.5 | 1.8 | 1.7 |

Based on a scale of 1 to 4 where:
1 = very important/satisfied
2 = somewhat important/satisfied
3 = not very important/satisfied
4 = not at all important/satisfied

[a] Simple average of responses

Source: Survey of anglers.

# ANNEX F

# METHODOLOGY FOR ESTIMATING ANGLER-DAYS

## ANNEX F - METHODOLOGY FOR ESTIMATING ANGLER-DAYS

Estimated angler-days by residence class were estimated through several independent approaches. The main approach was:

- get MOE license sales information on number of licences sold in the four regional offices in the study area, (i.e. Terrace, Smithers, Burns Lake and Houston);
- apply the angler survey percentage of active licenses to each residence class;
- multiply the estimated active licence holders by the angler survey average days fished.

The results of this exercise were:

| Angler Residence | No. Licenses Sold | Share Active | Average Days | Estimated Total Days |
|---|---|---|---|---|
| Local Area | 9,100 | .840 | 17.3 | 132,200 |
| Rest of B.C. | 3,969 | .800* | 6.2 | 19,700 |
| Rest of Canada | 2,146 | .806 | 5.2 | 9,000 |
| Outside Canada | 3,395 | .805 | 8.3 | 22,700 |
| All | 18,610 | | | 183,600 |

* Estimate

Non-local angler days could be underestimated if non-locals bought licences outside the local area and then fished locally. Local angler days could be overestimated if reported local days included some angler days for Francois Lake and Ootsa Lake, for example, which are outside of the study region.

For certain residence categories we constructed independent estimates through employing ratios based on the share of total days that was targeted at steelhead, or the share of total days that was guided.

The results of these "multiple lines of evidence" were correlated in generating the following angler-day estimates used in the study.

| Angler Residence | Days Fished |
|---|---|
| Local Area | 125,000 |
| Rest of B.C. | 25,000 |
| Rest of Canada | 15,000 |
| Outside Canada | 25,000 |
| All | 190,000 |

# ANNEX G

# METHODOLOGY FOR ESTIMATING ECONOMIC IMPACTS

# ANNEX G - METHODOLOGY FOR ESTIMATING ECONOMIC IMPACTS

Economic impacts to the local and provincial economies were estimated in two main steps. First, income and employment impacts of all expenditures by anglers were estimated. Secondly, impacts attributable to angling in the Skeena watershed were derived by prorating these total impacts.

| | Expenditures | |
|---|---|---|
| | **Local** | **In-Province** |
| Total All Activities ($ million) | $12.6 | $15.8 |
| Sport Fishing Activity ($ million) | $10.4 | $13.5 |
| Share Attributable to Fishing | .825 | .854 |

As outlined in Section 5.2, expenditures by anglers were allocated to sport fishing or to other activities based on primary trip purpose. The resulting daily expenditures for the various angler categories are presented in Exhibit G.1.

***Approach and Information Sources***

Several information sources were used in the economic multiplier analysis:

- direct guide impacts from Exhibit 3.3;[1]
- direct multipliers and total (direct, indirect plus induced) multipliers from the British Columbia portion of Statistics Canada's Interprovincial Input-Output Model;
- provincial Keynesian consumption multipliers from the above Statistics Canada model;
- a local area Keynesian consumption multiplier of 1.19 specifically developed for the study area (based on information/assumptions on the tax rate, savings rate, share of consumer purchases made locally, and the import content of local consumer goods; and
- local area supplier multipliers specifically developed for study area (based on Statistics Canada direct multipliers plus assumption that 25% of direct purchases by suppliers were made locally).

[1] Revenues from guiding in the Skeena watershed were an estimated $2.6 million of the total $3.4 million guide revenue. The direct impacts from all guiding activity in Exhibit 3.3 were adjusted to reflect only Skeena watershed impacts.

The resulting economic impacts from all expenditures made by anglers are summarized in Exhibit G.2, i.e., the results of the first step above. Impacts attributable to angling in the Skeena watershed then were determined by prorating (e.g., provincial income attributable to angling was .854 x $14.9 million or $12.7 million).

*Multiplier Analysis*

Two very different types of multipliers can be calculated from the information in Exhibit G.2:

- a normal multiplier -- total impacts per $ initial expenditure; and
- a ratio multiplier -- total impacts divided by direct impacts

Ratio multipliers by definition must be greater than one. Normal multipliers can be less than or greater than one since the base or multiplicand is the initial expenditure, and not just the direct income component of the expenditure.

For British Columbia tourism sectors, ratio multipliers usually fall in the range of 1.5 to 2.5, and normal multipliers usually fall in the range of 0.9 to 1.2. The multipliers implicit in Exhibit G.2 are consistent with these ranges.

Local area multipliers are much smaller than provincial multipliers since the local economy is not as integrated as the provincial economy, i.e., imports of goods and services are greater at the local level.

## Exhibit G.1: Expenditures by Anglers and Expenditures Attributable to Sport Fishing

| Angler Type/ Residence | $ per Angler-Day Spent Locally | | $ per Angler-Day Spent Provincially | |
|---|---|---|---|---|
| | $ Total | $ Attributable to Angling | $ Total | $ Attributable to Angling |
| ***Guided Angler*** | | | | |
| Local Resident | $125 | $118 | $125 | $118 |
| B.C. Resident | 223 | 115 | 316 | 291 |
| Canadian Resident | 306 | 306 | 399 | 399 |
| Non-Canadian | 288 | 282 | 384 | 370 |
| All | 284 | 273 | 378 | 365 |
| ***Non-Guided Angler*** | | | | |
| Local Resident | $39 | $32 | $45 | $37 |
| B.C. Resident | 61 | 33 | 83 | 61 |
| Canadian Resident | 110 | 97 | 132 | 116 |
| Non-Canadian | 85 | 67 | 119 | 92 |
| All | 51 | 40 | 63 | 51 |
| ***Guided plus Non-Guided*** | | | | |
| Local Resident | $39 | $32 | $45 | $37 |
| B.C. Resident | 65 | 35 | 89 | 67 |
| Canadian Resident | 126 | 114 | 153 | 139 |
| Non-Canadian | 166 | 153 | 225 | 203 |
| All | 66 | 55 | 83 | 71 |

Source: Daily expenditure data by Anglers in Annex E plus shares of expenditures attributable to sport fishing as outlined in Section 5.2.

**Exhibit G2: Economic Impacts from Expenditures by Anglers Fishing the Skeena Watershed[a]**

| Guided Activity | Direct | Indirect and Induced | Total |
|---|---|---|---|
| *Local Area* | | | |
| Revenue ($ million) | $2.6 | NA | NA |
| Income or Value-Added ($ million) | $1.5 | $0.6 | $2.1 |
| Wages and Salaries ($ million)[b] | $0.9 | $0.4 | $1.3 |
| Employment (PY's)[c] | 45 | 20 | 65 |
| *The Province* | | | |
| Revenue ($ million) | $3.2 | NA | NA |
| Income or Value-Added ($ million) | $1.6 | $1.6 | $3.2 |
| Wages and Salaries ($ million)[b] | $1.0 | $1.1 | $2.1 |
| Employment (PY's)[c] | 45 | 40 | 85 |
| **Non-Guided Activity** | | | |
| *Local Area* | | | |
| Revenue ($ million) | $10.0 | NA | NA |
| Income or Value-Added ($ million) | $5.0 | $1.3 | $6.3 |
| Wages and Salaries ($ million)[b] | $3.5 | $0.9 | $4.4 |
| Employment (PY's)[c] | 135 | 30 | 165 |
| *The Province* | | | |
| Revenue ($ million) | $12.6 | NA | NA |
| Income or Value-Added ($ million) | $5.5 | $6.2 | $11.7 |
| Wages and Salaries ($ million)[b] | $3.9 | $4.2 | $8.1 |
| Employment (PY's)[c] | 150 | 120 | 270 |
| **Guided plus Non-Guided** | | | |
| *Local Area* | | | |
| Revenue ($ million) | $12.6 | NA | NA |
| Income or Value-Added ($ million) | $6.5 | $1.9 | $8.4 |
| Wages and Salaries ($ million)[b] | $4.4 | $1.3 | $5.7 |
| Employment (PY's)[c] | 180 | 50 | 230 |
| *The Province* | | | |
| Revenue ($ million) | $15.8 | NA | NA |
| Income or Value-Added ($ million) | $7.1 | $7.8 | $14.9 |
| Wages and Salaries ($ million)[b] | $4.9 | $5.3 | $10.2 |
| Employment (PY's)[c] | 195 | 160 | 355 |

[a] Not all of the impacts are "attributable" to sport fishing.
[b] Included in income.
[c] Person years.

# ANNEX H

# GUIDE COMMENTS

Selected comments of guides responding to the mail survey are reproduced below under five general headings. The intent is to give the flavour and diversity of guide opinions. Comments are identified by location of guide operation -- Lower Skeena versus Upper Skeena.

## I RESOURCE MANAGEMENT AND REGULATIONS

1. "Manage the resource for biodiversity. Enforce the laws on the books. Less rules -- more enforcement." [Lower Skeena guide]

2. "There is no management of the resource. DFO policy is ridiculous and damaging." [Lower Skeena guide]

3. "Need one rather than three branches of government making rules and regulations." [Lower Skeena guide]

4. "Get rid of the commercial fishermen. Would like to see more fish in the river." [Upper Skeena guide]

5. "Make it no kill on Lower Skeena until September 15. This allows upper s s that are weakest to escape." [Upper Skeena guide]

6. "Eliminate mixed stock gillnet fishery at Skeena mouth." [Upper Skeena guide]

7. "It would be nice to have management that had conservation in mind. We need to protect the wild, fantastic steelhead and enhance the already depleted coho." [Upper Skeena guide]

8. "Changes in fishing policies and regulations make it difficult for Europeans." [Lower Skeena guide]

9. "Reduce kill limits and the commercial activity at the mouth of the Skeena." [Lower Skeena guide]

10. "Open sockeye and pinks to sport fishermen." [Lower Skeena guide]

11. "Logging is a concern." [Upper Skeena guide]

12. "The management of the fishery must allow a minimum escapement of 35,000 summer steelhead and at least triple the current escapement of summer coho past the commercial fishery." [Lower Skeena guide]

13. "Change the two-day possession limit to a weekly possession limit. The current low possession limit is what we get the most complaints about, and the reason why many clients go to Alaska rather than return." [Lower Skeena guide]

14. "Bring back the regulations in place before 1990." [Lower Skeena guide]

15. "The interception of steelhead in the mixed stock fishery at the Skeena mouth, in the native fishery at Moricetown and in the Alaskan fishery at Noyes Island are a great harm." [Upper Skeena guide]

16. "If MOE ever went to a one salmon possession limit, it would kill my operation." [Lower Skeena guide]

17. "The methods of the commercial fishery are almost prehistoric and must be modified along with those of the so called Native Food Fishery which we all know is a hoax." [Upper Skeena guide]

18. "The regulations make it almost impossible to provide good service in an area like Terrace where river conditions are so unpredictable." [Lower Skeena guide]

19. "These are our resources. As long as DFO ignores the necessary management responsibilities, we have no hope." [Lower Skeena guide]

20. "The regulation of 10 fish for non-resident, non-guided versus 2 fish possession for guided is unfair." [Lower Skeena guide]

## II GUIDE RESTRICTIONS AND QUOTA ALLOCATION

1. "Policy towards guides is inconsistent and confrontational. The new policy is an improvement. Let the guide business grow at its own rate -- do not force feed us rivers." [Lower Skeena guide]

2. "Lack of rod days and fear of losing rod days (use or lose) are constraints to growth." [Lower Skeena guide]

3. "Need to be credited with activities for three years rather arbitrary time period." [Lower Skeena guide]

4. "The Class 1 and Class 2 designation of waters is bankrupting me." [Lower Skeena guide]

5. "In 1991 I got less clients from Europe due to more stringent regulations." [Lower Skeena guide]

6. "You need to provide for expansion of operations not yet at full capacity." [Lower Skeena guide]

7. "All non-residents on Class 1 and 2 rivers should be guided. Many non-residents don't know the species of fish that they catch." [Upper Skeena guide]

8. "Guiding can not operate satisfactorily on a one year licence system as is now the case." [Upper Skeena guide]

9. "We have no where to expand. We are overcontrolled by policy and regulations which were put in place without any firm data." [Lower Skeena guide]

10. "Rod-day limitations due to decreasing steelhead stocks is a constraint." [Upper Skeena guide]

11. "Guided fishermen should not be penalized for hiring a guide. They should have all the benefits of an unguided non-resident." [Upper Skeena guide]

## III BUSINESS CONSTRAINTS

1. "Small business banking policies are a constraint to growth." [Lower Skeena guide]

2. "The opportunity to generate export revenue is endless if we can get more wild steelhead and salmon in the river system." [Upper Skeena guide]

3. "The lack of steelhead and salmon fishery opportunities is making it difficult to get repeat clientele. We need a longer fishing season." [Upper Skeena guide]

4. "Native land claim aspirations." [Upper Skeena guide]

5. "Being able to secure suitable financing for advertising, capital expenditures and loan consideration." [Lower Skeena guide]

6. "Under qualified guides and illegal guides/packers hurt the industry." [Lower Skeena guide]

7. "The commercial fishery is condensing the angling and guiding season into a shorter and shorter time period. Upper Skeena tributaries used to have good steelheading in July and August. These runs have been seriously overfished by the commercial fishery – only vestigial remnants of these runs remain. The same thing is happening to the run for the first two to three weeks of September." [Upper Skeena guide]

8. "In those years when winter does hold off until mid-November, it is virtually impossible to attract anglers to the lodges at these times due to cold temperatures." [Upper Skeena guide]

## IV COMMUNICATION

1. "Management would work a lot better if MOE took seriously the input of guides, Indians and other user groups. MOE managers are serving their own goals, and not those of the user groups." [Upper Skeena guide]

2. "Facts are estimates e.g., MOE says there are too many guides in the river." [Lower Skeena guide]

3. "Better consultation needed with interested groups such as Terrace Angling Guides Association." [Lower Skeena guide]

4. "A closer relationship between lodge owners and MOE is needed." [Lower Skeena guide]

5. "MOE has no idea how a guiding operation works and the requirements guides have to provide to satisfy their clients. Spend more time with guides rather than making more regulations." [Lower Skeena guide]

6. "Unfortunately the Ministry listens to pressure groups like the Steelhead Society which does not speak for the majority of sport fishermen. They have a particularly elitist view." [Lower Skeena guide]

7. "DFO and MOE must cooperate!" [Lower Skeena guide]

8. "Need better and more frequent meetings with Fish and Wildlife officials to address local problems in each area." [Upper Skeena guide]

9. "I have letters dated 1976 begging DFO for better management at the mouth regarding the sport fishery. All have fallen on deaf ears." [Upper Skeena guide]

10. "I feel Fish and Wildlife is working in my best interests." [Upper Skeena guide]

## V OTHER

1. "The MOE Steelhead Status Reports are pessimistic and scaring away steelhead anglers." [Upper Skeena guide]

2. "There are no solutions." [Lower Skeena guide]

3. "Native unrest is a constraint to growth. Deal with land claims." [Upper Skeena guide]

4. "The development of new large-scale lodges is using up all the available quota." [Lower Skeena guide]

5. "Our 1991 season in the Babine is a substantial gain over previous seasons, even with the bad publicity and logging." [Upper Skeena guide]

6. "Restrict the sale of salmon by Natives. Clear all creeks of debris where practical and accessible." [Upper Skeena guide]

7. "Unless DFO addresses these important issues immediately, tourism in the Upper Skeena for drawing sport fishermen is doomed. Hundreds of business are being affected. It's an unfair, unjust and cruel situation for DFO to hold a money-making Upper Skeena fishery at bay -- as opposed to a subsidized commercial fishery." [Upper Skeena guide]

8. "Lack of congestion is a key part of the experience." [Upper Skeena guide]

9. "The guide is a teacher, a skilled entertainer." [Upper Skeena guide]

10. "Terrace-area guides are selling pounds of fish that you can take home. We are selling the experience." [Upper Skeena guide]

11. "The guide industry is more mature than it was five years ago. Five years ago guides would not even talk to one another." [Lower Skeena guide]

12. "The non-guided, non-resident who does not spend money in the area is a problem." [Lower Skeena guide]

13. "Repeat customers from Europe see the changes in regulations over the last five years, i.e., every year is different, more stringent." [Lower Skeena guide]

14. "I insist on clients releasing all steelhead -- no problem with clients." [Lower Skeena guide]

15. "Not happy with the light fine an individual got for guiding without a license." [Lower Skeena guide]

# ANNEX I

# ANGLER COMMENTS

Selected comments of anglers responding to the mail survey are reproduced below under eight general headings. The intent is to give the flavour and diversity of angler opinion. Comments are identified by angler residence, guided versus non-guided and target species.

## I RESOURCE PROTECTION

1. "Please protect the resource so future generations can enjoy it." [Smithers non-guided steelhead angler]

2. "The runs must be enhanced; accept some closures, barbless hooks, etc. I have seen the best since 1967 and the worst (last year). I will sorely miss British Columbia, the Babine and Bulkley--they were great rivers" [Washington non-guided steelhead angler]

3. "Do all in your power to preserve your valuable steelhead resource" [New York guided steelhead angler]

4. "The sport fishery is dying. It has become a privilege not a right. Protect the steelhead please! [Burns Lake steelhead angler]

5. "At the rate the federal and provincial governments are handling the stocks, my children will probably never be able to fish steelhead" [Smithers non-guided steelhead angler]

6. "A beautiful area that must be preserved and protected always" [Alberta unguided rainbow trout and char angler]

7. "Keep the Babine watershed pristine. It is priceless and valuable in the long run. The river and the fish should be protected for the long term economic welfare of B.C. [California guided steelhead angler]

8. "Please conserve and enhance my fish resource" [Richmond non-guided steelhead angler]

9. "Maintain integrity of streamside and viewscapes surrounding the high value fishing areas. Maintain limited access by boat or plane." [Burnaby non-guided salmon angler]

10. "I am disturbed by the decline in wilderness areas. I would choose an area undisturbed by logging operations if I could find one that didn't require a helicopter to get to." [Vancouver non-guided trout angler]

11. "Keep fishing in the Skeena as good as it is now. There are not many places in the world as good" [German non-guided salmon angler]

## II FISHING SUCCESS RATES

1. "Three years ago, I fished with friends in the Smithers area. We fished Babine Lake and one smaller lake and had real good success on trout. I'll be back in 1992 if things work out" [Nebraska non-guided trout angler]

2. "Stocks are depleted on most accessible lakes" [Terrace non-guided trout angler]

3. "All in all I have been in every province in Canada including James Bay, and find that fishing in Canada cannot be beat" [Nevada non-guided rainbow trout angler]

4. "The fishing has gotten worse each year I've fished the Skeena Watershed. There are simply not enough fish in the rivers" [Alaska guided steelhead angler]

5. "You need more steelhead. I only caught one steelhead in six days' fishing. For good fishing I would have averaged one fish per day--two fish per day would be great steelhead fishing" [California guided steelhead angler]

6. "I just like to get out--it doesn't matter if I catch a fish. I take pictures when I'm not fishing" [Terrace non-guided salmon angler]

7. "The number of fish is inadequate. Probably commercial fishing at river mouth reduces number of steelhead in river. I probably won't return unless fish population increases dramatically. [California guided steelhead angler]

8. "Never caught any fish but enjoyed my trip" [Alberta non-guided salmon angler]

9. "If the fish population does not improve, I am not going to return. I enjoy the area and the guides" [California guided steelhead angler]

10. "Very good fly fishing. Outstanding country. Will be back in 1991 with five other fishermen" [California guided trout angler]

## III SPORT FISHING REGULATIONS AND ENFORCEMENT

1. "We need easier interpretation of sport fishing regulations" [Terrace non-guided salmon angler]

2. "Our English is not that good. Perhaps you could put Freshwater Fishing - Regulation Synopsis in German language" [Swiss guided salmon fishermen]

3. "Due to the heavy commercial fishery at the Skeena mouth, the migration of fish has gotten worse in the last few years. On the other hand millions of pinks move up the river but are off-limits to sport fishermen. The two salmon a day regulation is restrictive though overseas visitors have weight limitations on the airplane. The regulations are very complicated to aliens. I have seen Canadian fishermen take up to 20 chinook an afternoon out of the Kispiox mouth" [German guided salmon angler]

4. "Too many mid season changes in the regulations. Simplify the regulations a bit" [Smithers non-guided angler]

5. "Cut the crap and get pinks and sockeye open to sport fishing to relieve pressure on the other species" [Terrace non-guided salmon angler]

6. "I think you should go catch and release in any water with high angler use and you better make sure the logging is done correctly--lose the spawning beds and you will be history!" [California guided steelhead angler]

7. "The Babine River for trout should be made into a catch and release river and fly-fishing only. Now it is supposed to be fly fishing only, but I saw that rule abused--no one around to enforce it." [Oregon non-guided trout angler]

8. "I feel that fishing limits should be lowered. For example, no one needs to keep ten large chinook salmon" [Terrace non-guided salmon angler]

9. "Area should be closed to allow rebuilding of all stocks" [Alberta guided steelhead angler]

10. "Within the last seven to eight years, there has been a drastic increase in sport fishermen and a decrease in fish, especially steelhead. Perhaps limited entry licences for early chinook runs could be initiated" [Terrace non-guided salmon angler]

11. "More people that live in the area should abide by the rules. I see a lot of infractions at peak times of the year--coho at Lakelse for example. Enough funds are collected by licences to afford a stronger policing of rivers in the area" [Terrace non-guided salmon angler]

12. "I would support doubling of licence fees if that money was spent towards enhancement" [Terrace non-guided salmon angler]

13. "I would like to see more public involvement in reporting resident and non-resident fishermen not sticking to catch limits" [Terrace non-guided salmon angler]

14. "Out-of-province people should pay higher licence fees" [Terrace non-guided salmon angler]

15. "Do something about the killing of coho and steelhead by catch and release--poor steelhead with nine fish hook holes in mouth and lip has no chance against the next fishermen" [Smithers non-guided salmon angler]

16. "The book of regulations just gets thicker and thicker every year. The thicker it gets, the less people read it and the more we all lose."

17. "Barbless/catch and release with perhaps one keeper per person per day is the way to go" [West Vancouver inactive angler]

18. "We have always had quality fishing and have been treated great by you Canadians. I hope you do not increase limits on fish taken--they are too liberal and should be shortened up" [Oregon non-guided trout angler]

19. "Daily and possession limit is very low and the price of licences continues to rise" [Alberta non-guided salmon angler]

20. "You should outlaw motorboats in the Kalum River" [Terrace non-guided steelhead angler]

21. "Would like to see more conservation officers checking for licences" [Houston non-guided trout-char angler]

22. "Eliminate boat fishing on the Bulkley River. I takes away from the beautiful experience seeing and hearing a noisy jetboat running up and down a small flowing river [Utah guided steelhead angler]

23. "All the recent changes in regulations tell us that you don't want the tourists to fish, but you do want our money. For the past 15 years, we have been coming to Terrace, B.C. staying at the xxx Trailer Park for four months a year. We purchase groceries, gas, fishing gear, etc. We have been spending several thousands of US dollars in the Terrace area alone. Until your regulations get back to where they were in 1989, we will not be coming back. Several of our friends feel the same as we do" [Washington non-guided salmon angler]

## IV CLASSIFIED WATERS

1. "You should eliminate daily fees for Class I and II waters. If you drive 1000 miles, you should not be taxed off the river" [Washington non-guided steelhead angler]

2. "The fee schedule for fishing Class II waters should be more flexible so that the licence could be used on days other than the specific days paid for. I lost $40 because of water conditions that prevented me from fishing the days I paid for" [Alberta non-guided salmon angler]

3. "I truly stand behind the excess fee for out-of-B.C. residents, and enjoy tremendously the quality for us residents" [Terrace non-guided salmon angler]

4. "Less pricey licensing and allow intermittent days on classified waters--you should be able to sightsee some days and fish others without wasting a paid fishing day" [Michigan non-guided steelhead angler]

5. "You need a better way of explaining Class II waters so it is not so confusing for visitors" [Alberta non-guided salmon angler]

6. "Class I and Class II waters are confusing. Also it seems like $10-20 for one day is high when outsiders do not know if these are really better places to fish--locals who know best go free. This may detract tourists" [Alberta non-guided salmon angler]

7. "Lift the restrictions on out-of-province people. Let us fish the Skeena like the locals" [Colorado non-guided salmon angler]

8. "The user fees for classified waters makes it too expensive to fish in B.C. We will not return" [Oregon non-guided salmon angler]

9. "I couldn't afford the extra daily licence for salmon fishing so I left the Terrace area and went back to the Burns Lake area. The Burns Lake area has wonderful fishing and is beautiful. I will probably never go back to the Terrace area because it is not just worth the bother of wading through the regulations and the fortune it costs" [Alberta non-guided angler]

10. "The $10 a day fee on the Skeena is not a problem but the requirements of a two week fishing period is ridiculous" [Washington non-guided steelhead/salmon angler]

11. "Your present river classification is clearly discriminatory (and probably unconstitutional) to Canadians residing outside of B.C. If you don't change, you no doubt will lose these fishermen. If I travel to a remote area, how is one to know exactly how many days one is going to fish?" [Alberta non-guided salmon angler]

12. "1990 was the first year I haven't fished the Skeena system in 16 years. I refuse to pay the B.C. government $10 or $20 a day when the Skeena system has federally funded hatcheries on it" [Alberta inactive angler]

## V GUIDE OPERATIONS

1. "XXX runs a first rate operation on the Morice River. I'd go again in a minute if he had a opening" [Montana guided steelhead angler]

2. "A better guide would have made the trip more enjoyable [California guided steelhead angler]

3. "Stop non-citizens from holding guiding licences" [Terrace non-guided salmon angler]

4. "Our guide wasn't willing to try other fishing spots. If he was more experienced, he may have tried harder to please his customers. We would not use the guide or his business again" [Alberta guided salmon angler]

5. "Not experienced for salmon fishing. Next time I'll get a guide" [Alberta non-guided salmon angler]

6. "Need a bed to sleep in--you should not have to bring a sleeping bag that far" [California guided trout angler]

7. "The competition for the guiding business is Alaska where for the same costs you are not flooded out, nor is there a shortage of fish. You need alternate fishing opportunities to fish when the rivers are in flood" [Ohio guided steelhead angler]

8. "A wonderful river--The Babine--fine food and fine guide, but I think the Babine should be restricted to fly fishing only" [New York guided steelhead angler]

9. "There seems to be too many fishing resorts owned by people from the U.S. or Germany. These individuals reside in B.C. for six months or less and do nothing to encourage locals. If anything, they discourage locals to fish near their resorts." [Southbank non-guided trout angler]

## VI OTHER RESOURCE USERS

1. "I feel the bycatch of steelhead by the commercial industry must be reduced to save the sport industry" [Pitt Meadows non-guided salmon angler]

2. "The steelhead are too important to take a back seat to commercial fishing at the mouth of the Skeena" [Utah guided steelhead angler]

3. "Indians should not throw humpies out of their nets already dead. I didn't like all the fish that fall off the gaffs at Moricetown canyon right in front of the fish ladders" [Smithers non-guided salmon angler]

4. "No more gaffing at Moricetown. Mandatory 24 hour net check" [Telkwa non-guide salmon angler]

5. "The Kispiox logging condition seems out of control" [Lower Mainland salmon angler]

6. "I have worked and travelled the world and B.C. has the greatest potential as a destination for sportsmen, yet it also clearly has the most antiquated forestry practices. The logging practices I witnessed would have a person incarcerated in most of Europe" [Vancouver non-guided trout angler]

7. "We would have preferred the natives not acting as if they owned the place--made us feel like trespassers. We were very disturbed about the natives openly selling salmon" [Fort St. John salmon angler]

8. "Native fishermen should not injure fish and then throw them back into the river--this is not food fishing. Food fishing for their own use is OK" [Smithers non-guided salmon angler]

9. "Why should the commercial fishermen be allowed in the mouth of the Skeena?" [Terrace non-guided salmon angler]

10. "My only complaint is only being able to catch one or two salmon a day and work hard to do it, and then watch natives at Moricetown gaff hundreds of salmon, some of which are sold" [Alberta non-guided salmon angler]

11. "I'm concerned about the remoteness, wildlife and natural beauty of the area declining because of increased logging and mining in the area" [California non-guided salmon angler]

## VII ACCESS, CONGESTION AND LITTER

1. "Access was so good places were crowded and noisy--people leave too much garbage" [Houston non-guided rainbow trout angler]

2. "I liked the remote campsites of the Ministry of Forests" [Alberta non-guided salmon angler]

3. "We have enough people fishing the Skeena Watershed already. We do not need more tourists" [Terrace non-guided salmon angler]

4. "We enjoy the area and the well-maintained campgrounds and facilities. We plan on spending many more years of holidays in the area" [Alberta non-guided salmon angler]

5. "If the area becomes too commercialized, our group will not return" [California non-guided rainbow trout angler]

6. "You should allow some logging in the Tweedsmuir Park area so that there are logging roads to provide access" [Burns Lake non-guided trout angler]

7. "If only anglers would not leave discarded fishing line, hooks, wrapping, etc. on riverbanks" [London, U.K. non-guided salmon angler]

8. "Need less damage by 4x4s and litter; also clear marking of what roads are for logging trucks only or for mixed use" [Richmond non-guided angler]

9. "You need affordable access to fishing areas other than lodges. We do not enjoy guides and formal dining" [California non-guided rainbow trout angler]

10. "Are there any easily accessible rainbow trout streams where a person my age (77) can still have the pleasure of dry fly fishing?" [California non-guided trout angler]

11. "We need spots with less people" [Burns Lake non-guided trout and char angler]

12. "It was very difficult as a local to go to the regular fishing holes because tourists and guides would camp out on them" [Terrace non-guided salmon angler]

13. "My hope is that the Skeena fishery is not promoted to the same extent as the Kitimat River--a problem which ruined the fishing experience on the Kitimat River for locals" [Terrace non-guided salmon angler]

14. "More boat launch access whould be appreciated" [Montana non-guided salmon angler]

## VIII OTHER

1. "The value of a fish to the sport fishery far outweighs its value sold as commercial catch. B.C. should pursue every avenue as vigorously as possible to combat high seas driftnetting, commercial fishing and any other industry which threatens the livelihood of this magnificent fish" [Utah guided steelhead angler]

2. "Lay off the Canadian tourists--we are part of this country too" [Alberta non-guided salmon angler]

3. "The declining steelhead stocks are going to cost local tourism dearly. We need to develop incentives for a terminal fishery whereby it would be beneficial for commercial and native fishermen to use methods where steelhead can be returned unharmed to the river where they will provide the greatest dollar return" [Smithers non-guided salmon angler]

4. "You need better campsites for motorhomes" [Alberta non-guided salmon angler]

5. "I fished very little from lack of time" [Burns Lake non-guided trout angler]

6. "You do a good job but you need more resources and less commercial and native fishing pressure on the stocks. Allowing non-Indians to be treated differently from non-natives is nonsensical and racist" [Vancouver non-guided salmon angler]

7. "Foreigners come and think they own our town and fishing rivers, and abuse the rivers and the fish" [Terrace non-guided trout angler]

8. "We were hampered/stopped by Indian blockade against logging. Also, I was appalled by the Indians taking salmon by blocking the stream and hauling them out by hand!" [Texas non-guided trout angler]

9. "Increase information on fishery experiences available to fly fishermen" [New York guided steelhead angler]

10. "We need less Alberta meat mongers in RVs occupying Skeena banks overnight with no contribution to economy" [Burnaby non-guided salmon angler]

11. "You need published maps to show visitors where the good river locations are" [Williams Lake inactive angler]

12. "I need more knowledge of fishing sites and appropriate techniques" [Ohio non-guided salmon angler]

13. "The fishery is becoming a rich man's sport. The lodges are up to $2000 a week--outside the retired person's reach when licence and travel costs are included" [Washington non-guided steelhead angler]

14. "American tourists need more respect for the river" [Prince Rupert non-guided rainbow trout angler]

15. "I fish to get away from the wife" [Prince George non-guided salmon angler]

16. "The money I spent was principally to visit family, not to fish" [Vancouver non-guided salmon angler]

17. "Too many fishermen, not enough fish" [Terrace non-guided salmon angler]

18. "We were treated very well. Even the Indian disturbance was handled well" [California non-guided trout angler]

19. "Need less out-of-town anglers" [Smithers non-guided steelhead fishermen]

20. "We enjoy fishing in lakes in our area. Travelling to rivers where we are allowed only one steelhead is hardly worth it" [Burns Lake non-guided trout angler]

21. "We would like to thank everyone in the town of Terrace. They were very helpful and nice. Very enjoyable to travel in B.C., except the gasoline prices" [Washington non-guided salmon angler]

22. "In spite of more and more restrictions on sport fishermen, success rate on steelhead and coho continues to plummet towards zero" [Smithers non-guided steelhead angler]

23. We are RV'ers and we continue to find the residents friendly, helpful, interesting and hospitable. I'm fully retired and usually spend two to three months in Canada" [California non-guided trout angler]

24. "Need to educate more on catch and release in both saltwater and non-tidal waters" [Alberta non-guided salmon angler]